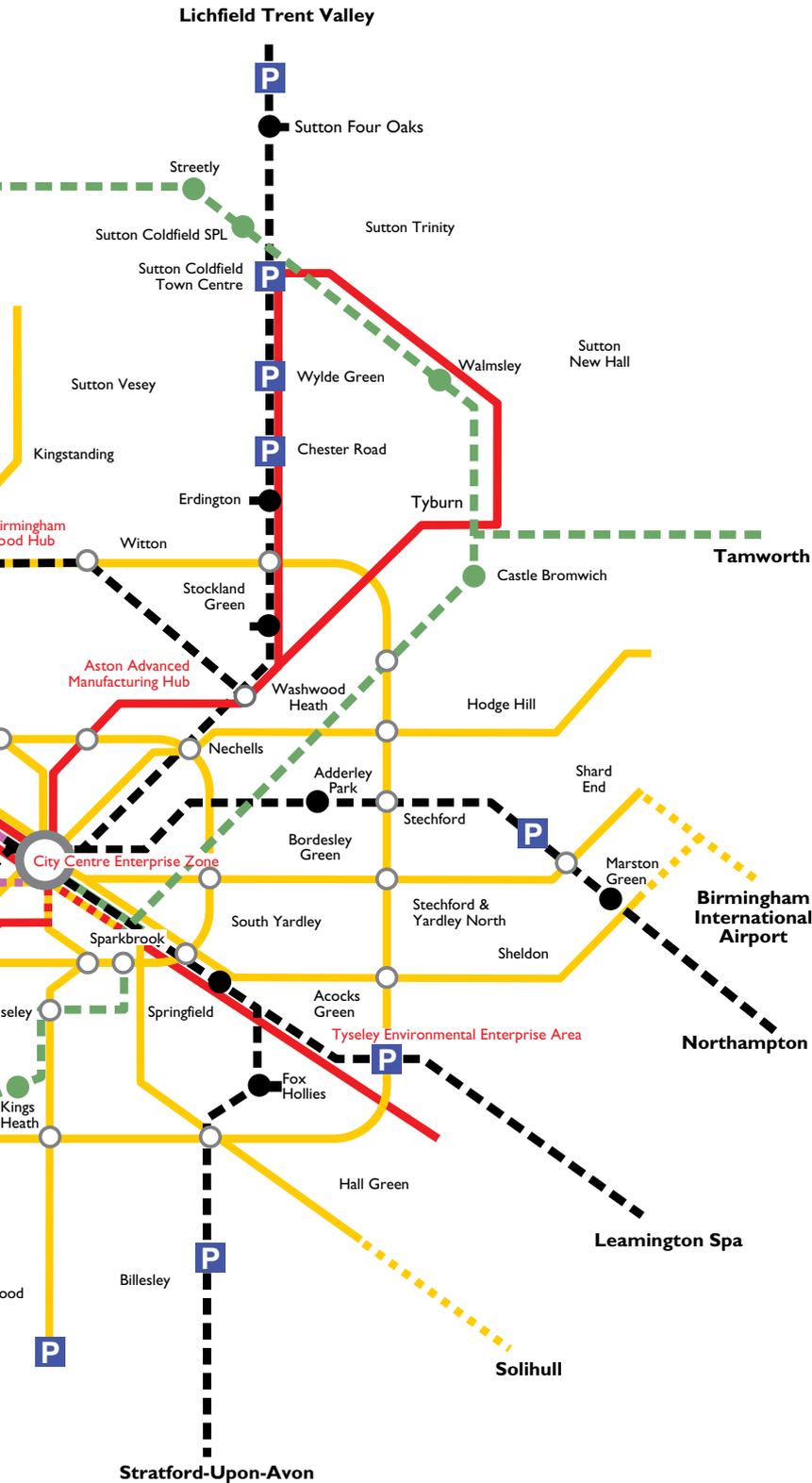




BIRMINGHAM MOBILITY ACTION PLAN

Delivering a journey for the future

Green Paper
November 2013



WSP Group Plc
One Queens Drive
Birmingham
B5 4PJ

Tel: 0121 352 4700
Fax: 0121 352 4701
wspgroup.com

FOREWORD



Councillor Sir Albert Bore

Leader of Birmingham City Council

Birmingham has seen a great deal of positive change in recent years. Our city is being transformed with projects such as the new central Library, New Street Station redevelopment and the realisation of the Longbridge master plan. We also have ambitious growth plans outlined in policies such as the Birmingham Development Plan and the Economic Growth Zone prospectus. The one thing that has been missing is a long term vision for our transport network.

Having an efficient transport system is a vital part of meeting our plans to move the city forward. Whilst we have had successes, in general Birmingham is lagging behind many UK and European cities in its thinking and importantly delivery of a truly integrated, sustainable transport system.

The Birmingham Mobility Plan (BMAP) is the first step to changing that. BMAP provides a long term strategy and direction which will guide the development of a transport system we can all be proud of.

This consultation process is a chance to engage with the people of Birmingham about what their transport needs and desires are. It is an opportunity to have an open discussion about our future direction. Within this document are some challenging concepts and areas which are a radical departure from the way we have been delivering transport in recent years. I believe a new approach is required and I am looking forward to hearing your views.

A handwritten signature in blue ink, appearing to be 'A. Bore'.



Councillor Tahir Ali

Cabinet Member for Development, Jobs and Skills

The new Birmingham Development Plan provides the long term strategy for developing new business and investment opportunities; generating economic and housing growth; and creating and capturing much needed jobs for our city and its residents. The BMAP is a key component to achieving our economic and social aspirations. This is because an efficient transport network facilitates people travelling to work and accessing services. It also enables businesses to access markets and customers, thereby creating new economic opportunities.

Birmingham faces some challenging facts in relation to unemployment and social exclusion. Our city unfortunately includes some of the most deprived areas in the country.

At the same time, Birmingham is the major driver of economic activity in the West Midlands region. However, local people and communities face transport barriers, which limit their opportunities. Accessibility, principally to jobs and training, is a major factor to overcoming social exclusion and promoting economic wellbeing. The major objectives in the development of BMAP are that the future transport system serving Birmingham should: promote connectivity within and beyond the city; be efficient and sustainable; and help to improve accessibility for people living in our most socially excluded areas.

A handwritten signature in blue ink, appearing to be 'T. Ali'.

FOREWORD



Councillor James McKay

Cabinet Member for a Green, Safe and Smart City

As Chair of Birmingham's Green Commission I recognise that transport contributes around 20% to the city's overall carbon emissions. BMAP is therefore a vital policy tool to help us reduce our dependency on cars and shift to more sustainable and healthier modes of transport. In order to meet our targets the city council will need to intervene into the transport system through either new infrastructure or policy measures, but it will also require a concerted effort by residents and businesses to change their travel behaviour and working practices. BMAP provides a blueprint to help achieve these aims

In addition BMAP's vision contains a number of strategies to reduce harmful air pollution targets and improve road safety. The strategy aims to ensure that the lives of all residents are improved and that the economic growth of the city is facilitated through the provision of an holistic transport system.

Many of the suggestions put forward in this document could transform the city. The consultation exercise is your opportunity to get involved with the development of an exciting new vision for Birmingham.

A handwritten signature in blue ink, appearing to read 'James McKay', located at the end of the foreword text.

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“This is about looking at transport from a different perspective, much more of a European city perspective, whereby they set a long-term strategy and use long-term funding opportunities to incrementally add to the system”

(Council Leader Sir Albert Bore, Birmingham Post - 23rd May 2013)

EXECUTIVE SUMMARY

What is a Mobility Action Plan?

A mobility action plan is a long term vision and strategy for a city's transport system. It seeks to understand the current and future challenges facing people and businesses and puts in place strategies to help the city reach its ultimate goals. The European Union (EU) recommends that all cities develop and adopt what is called 'Sustainable Urban Mobility Plans' (SUMP). The EU has produced guidance on what it believes should be contained in a SUMP. Above all they recommend that future transport planning should be centred around people's lives. Whether that be to help them access work, improve road safety for children, improve air quality or to allow businesses to flourish.

The Birmingham Mobility Action Plan (BMAP) is our response to this guidance and our chance to set a new direction for the city. This is a consultation document, it provides a significant amount of detail on the challenges we as a city are likely to face and presents a discussion on a number of key issues.

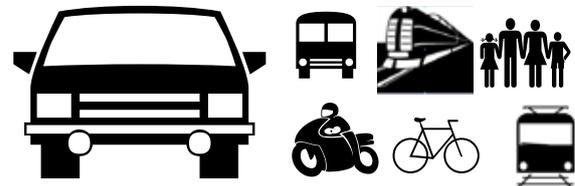
Why does Birmingham need a mobility plan?

There are currently around 3.3 million daily (Mon-Fri) trips on Birmingham's transport system. These comprise all modes and all purposes. This figure is consists of 2.8 million trips made by residents (household travel survey, 2011) and around half a million from people living outside Birmingham travelling in and out each day. **It is estimated that the total demand for travel on our transport system could rise to 4 million trips by 2031.**

Breaking today's demand down by mode there are around 1.3 million car trips on our roads, a million of which are made by the city's residents in the 380,000 cars owned across the city. The public transport system has to cope with around half a million daily trips within the city, which generates an AM peak influx of approximately 50,000 people arriving at the city centre.

On top of this there could be up to an additional 150,000 people in the City by 2031, all needing access to jobs and services. Using today's car ownership levels and travel habits then Birmingham's growth could result in an additional 80,000 cars in the City, 200,000 more car trips, 100,000 more residents on public transport and 18,000 more public transport passengers arriving at the city centre in the morning peak.

Birmingham residents make around 2.8 million journeys each day

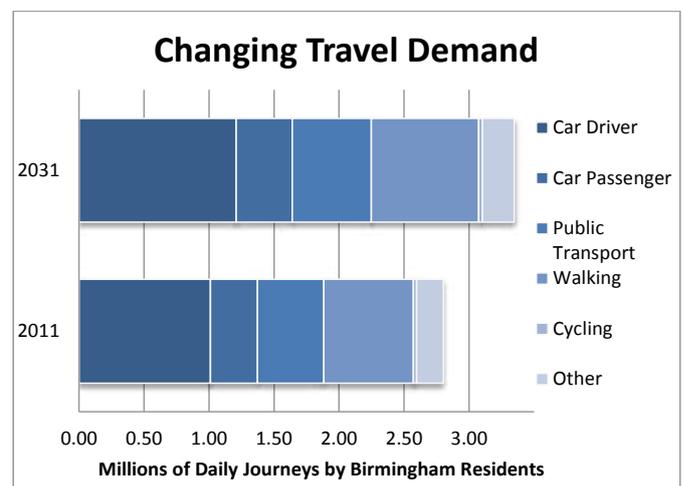


West Midlands Household Travel Survey (HHTS)

This level of demand for transport in the City leads to the road congestion, bus and train overcrowding, traffic accidents, carbon emissions and harmful air pollution that we see every single day in Birmingham. As our city's population and economy grows so all of these issues could worsen into the future.

These are all challenges facing the City which will require radical thinking and committed action to ensure that people and goods are moved efficiently and Birmingham's economic growth is not stifled.

The Birmingham Mobility action Plan provides the starting point for developing an aspirational transport system which will make a positive contribution to people who live in or visit Birmingham. To meet our current and future challenges there needs to be a new way of thinking about the provision for transport. This consultation document presents some challenging concepts and ideas which we believe will create a positive future for our city.



BMAP's vision for Birmingham is:

“BMAP will reinvent Birmingham’s transport system to meet current and future mobility challenges; facilitating strong and sustainable economic growth.

The plan will change the way that people and business think about travel into and around the city. By influencing travel behaviour and embracing technological change we will reduce carbon emissions, increase safety and improve people’s lives.”

BMAP's intention is to spark discussion and debate as to what the future of Birmingham's transport system should be. This consultation document includes concepts and ideas which indicate the council's current thinking on where the priorities should be for the next 20 years; in order to achieve a transport system we can all be proud of. The initiatives and proposals contained here are not intended to be a list of fully formed policy and infrastructure interventions. BCC recognises that further work is required on the detailed feasibility of either infrastructure or policy proposals contained in this consultation document.

Following the consultation phase this document will be redrafted into a White Paper policy document. BMAP will become the future transport strategy for the city which will fundamentally change the way transport is planned and delivered. We will include all policy levers which will enable the delivery of the BMAP vision, whether they are legislative, regulatory or new ways of funding transport infrastructure.

This Green Paper is grouped under three main themes:

- 1. Improving Strategic Connectivity – City-wide and Across the Region**
- 2. Improving Connectivity and Safety for Local Communities**
- 3. Improving Connectivity to and within the City Centre**

This Green Paper is the start of a conversation with residents, businesses and other stakeholders about where you believe the transport priorities should be; whether that includes some of the ideas put forward here or other potential solutions not yet considered.

Some of the ideas put forward in this document include:

- Challenging the car culture in the city.
- A new vision for a transformational public transport system. Including around 300km of new mass transit routes.
- Implementing 'Green Travel Zones' at large employment sites.
- A comprehensive package of measures to improve road safety.
- Significant investment in walking and cycling infrastructure. Including over 350km of new or upgraded cycle routes.
- Measures to reduce the impacts from freight, both in terms of the number of trips made and the emissions from vehicles.

[Please take the opportunity to get involved in shaping the future of Birmingham's transport. We look forward to hear your views during the consultation period.](#)

PART A – SETTING THE SCENE

AI – THE CASE FOR CHANGE

Part A Summary

This section presents the transport challenges that Birmingham faces, both now and in the future. The key messages relate to the level of demand across all modes of transport, from Birmingham residents and people travelling in from outside of the city. The city experiences significant road congestion on key routes, trains operating at peak capacity and bus interchanges seeing bus congestion at peak times. Congestion across all modes has impacts on our economy but travel and transport also has significant impact on society. These include health issues from harmful air pollutants, low levels of physical activity, casualties from road traffic collisions and social exclusion from poor accessibility to jobs and education opportunities. All of these issues need to be considered in the context of rising population and increased economic activity. This section sets out the challenges facing our economy and society arising from the city's transport system.

Why do we need a Mobility Action Plan?

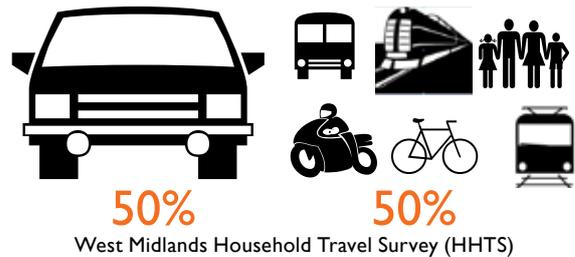
Transport and our Economy

Transport is central to our everyday lives. Every time we leave our homes we are consumers of one element or other of Birmingham's transport system; whether that's simply walking to the local shop, catching the bus or train to work, riding a bike to the leisure centre or driving a car to hospital. The more attractive and efficient we can make our transport system, the more attractive life in the city will be.

Transport is a significant enabler to the economy of an area. An efficient system enables people to access jobs and businesses to more easily move their goods and access wider markets. An inefficient transport system can have the opposite effect. In economic terms, inefficiency relates to an imbalance between supply and demand. Our demand for transport comes from our need or desire to move around the city or beyond, and the supply of transport includes aspects such as road space or the capacity of the buses or trains. Because supply is limited, when demand increases as population rises, jobs increase or people have more income to spend on leisure, so the economic 'cost' increases. In this case cost can be thought of as things like worsening travel times from congestion, environmental impacts, poor health and accident levels.

For example, we know from the West Midlands Household Travel Survey (HHTS) that Birmingham residents make approximately 2.8 million (single direction) journeys each week day or around 2.5

Birmingham Residents make around 2.8 million journeys each day



per day by each resident; around half of which are by car. In addition there are approximately half a million journeys in and out of the city each day from people who live outside of its boundaries. This demand leads to the road congestion, bus and train overcrowding, traffic accidents, pollution and carbon emissions that we see every single day.

Congestion caused by high demand harms our economy because it slows the movement of goods and makes it more difficult for us to get to work. More time travelling means less business and leisure time, impacting on our economy and lifestyle. Pollution and accidents also harms our economy because they result in ill health and reduced wellbeing; preventing people from working and enjoying life.

Birmingham needs a vision and a strategy to ensure its transport system is efficient, sustainable and healthy. The Birmingham Mobility Action Plan (BMAP) will set that vision.

Transport and our Society

Transport also has a major role to play in building an inclusive and healthy society. 36% of all households in Birmingham do not have access to a car and in some areas of the city this figure is far higher, with well over 50% of households not having access to a car. Birmingham’s sustainable transport system is vital for these residents to be able to access jobs, goods and essential services.

The Department for Transport states that regular physical activity of moderate intensity, such as walking and cycling, can bring about major health benefits and an improved quality of life. People who are physically active reduce their risk of developing major chronic diseases – such as coronary heart disease, stroke and Type 2 diabetes – by up to 50%, and the risk of premature death by about 20–30%. It is recommended that these health benefits could be achieved from 30 minutes of walking or cycling five times a week, thus highlighting the possibility to incorporate this level of activity into daily travel (Active Travel Strategy, Departments of Health and Transport, 2010). However, without good quality, safe facilities, people are understandably reluctant to walk or cycle. Pollution from petrol and diesel engines is also directly linked to poor health; particularly in locations which see high levels of congestion (such as the M6 corridor).

BMAP’s Place in Wider BCC Policy

Given the importance of a transport system to the economy and society there is a need to plan its future direction. This Mobility Action Plan provides that strategic vision for the future of transport in Birmingham.

BMAP is a twenty year vision for Birmingham but it will also be a live document, being monitored and refreshed on a rolling programme of reviews every five years. It provides a framework to ensure that all future investment decision making is aligned to a single vision and set of objectives and that all new schemes contribute to those.

BMAP is complementary to a number of BCC policies and strategies. In particular it lies in parallel with the Birmingham Development Plan, in that it uses the same future planning horizon and the same forecasts for population and jobs. However, BMAP is also complementary to the evolving West Midlands Local Transport Plan and the Greater Birmingham and Solihull Local Enterprise Partnership’s ‘Strategy for Growth and Strategic Economic Plan’. BMAP has also been developed in close cooperation with Centro and incorporates a number of policies and strategies from their ‘Towards a World Class Integrated Transport Network’ prospectus and regional Freight Strategy.

BMAP aims to bring together a number of policy non-transport strands, seeking ways that mobility planning can contribute to a wider agenda. These will include health, education, carbon reduction and air pollution. BMAP also feeds into the Smart City initiative which sets the city’s agenda for digital connectivity ways to improve data management and dissemination.



What are the Challenges Facing Birmingham now and in the Future?

Changing Population

Birmingham is a changing city. It has witnessed relatively fast population growth in the past 20 years, and is forecast to grow by as much as **150,000 more people by 2031** (Birmingham Development Plan, 2012).

The city has a comparatively young population, with 46% of the population being under 30, compared with a 38% average over England and Wales. These statistics are a distinct advantage to the city in attracting new investment and large employers; knowing that they will have access to a large pool of potential staff. However, from a mobility point of view, having a younger population brings additional challenges. Young people tend to travel more and those with children are often very reliant on cars for their varied travel needs.

Based on current levels of car ownership and usage it is estimated that that there could be up to **80,000 more cars in the city and 200,000 more daily car trips on our roads by 2031**. This will inevitably bring further challenges from congestion, accidents and pollution. The Department for Transport (DfT) is currently forecasting that congestion levels will worsen by as much as 83% in the West Midlands by 2035. This is a significant challenge to keeping the city moving.

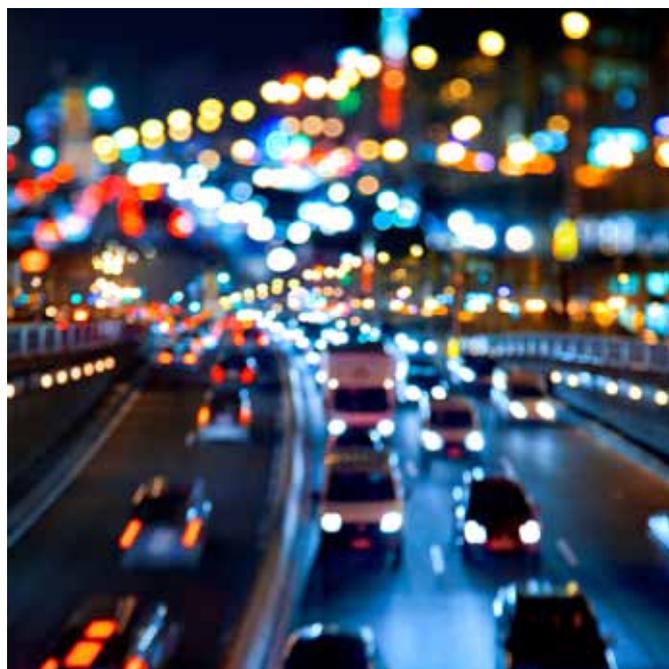
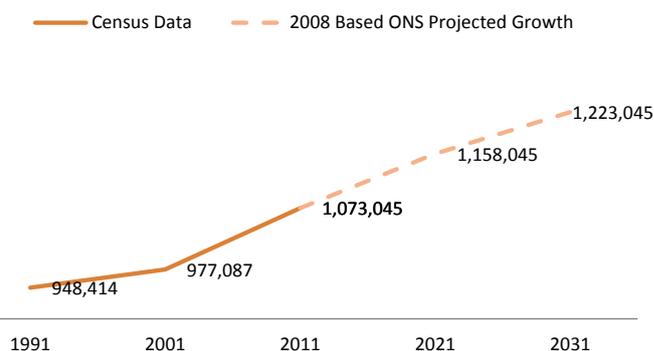


80,000 more cars in the city and **200,000** more daily car trips on our roads by **2031**

Total travel demand by Birmingham residents could rise from 2.8 to 3.3 million; with additional demand from residents of other areas using the city there could be as many as 4 million daily trips in the city by 2031. In addition to the additional cars, based upon today's travel behaviour there could also be an increase public transport demand by almost 100,000 passengers per day. That's the equivalent of the maximum carrying capacity of 280 typical trains seen on the Cross City Line (3 carriages) or 1,282 typical Birmingham double decker buses.

Growing Population

Birmingham's Growing Population



Economy in Need of a Boost

Birmingham's economic output totalled £20.9bn in 2011, which accounted for 22%¹ of the total economic output in the West Midlands region. However, comparative measures of economic output such as output per capita or per worker shows that Birmingham is below the national average and is mid ranking amongst the eight English core cities². Birmingham's position relative to other areas has also declined over the past decade. Associated with Birmingham's low employment and economic activity rates, is the high level of worklessness that exists in the City. Almost 120,000 Birmingham residents are in receipt of a workless benefit accounting for 17.2% of the working age population - well above the national average and the second highest rate of all the core cities. The outlook is similar for youth unemployment levels, where 10.7% of 18 to 24 year olds claim allowances, compared to 7.5% nationally.

Within the City, worklessness tends to be concentrated in the inner City and some deprived outer City areas. For example, over a quarter of 18 to 24 year olds in Washwood Heath currently claim job seeker's allowance and some areas of Aston, Nechells and Perry Barr have over 40% worklessness.

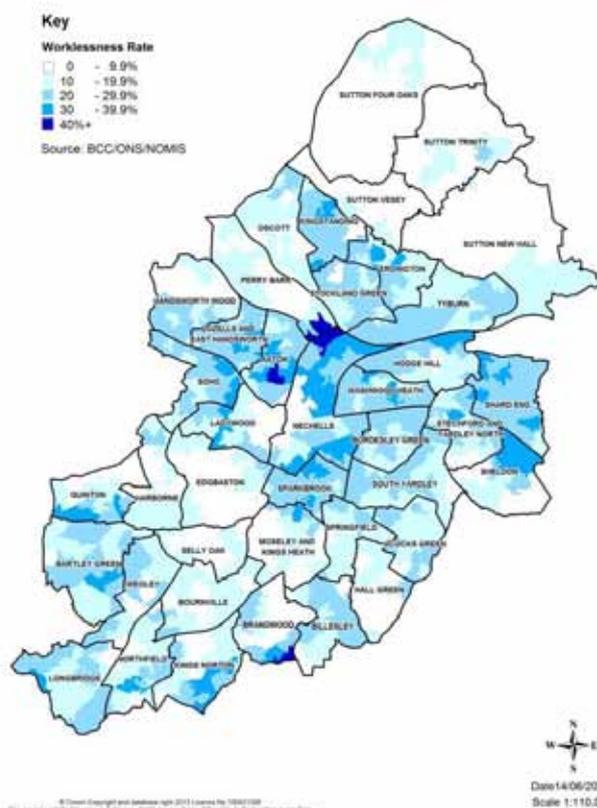
Transport can be a major barrier to accessing employment opportunities. People who are unemployed are less likely to own a car and to be reliant on public transport. Therefore, the connectivity provided by the public transport network and the cost of using it will be a major influence on a person's ability to access a job.

The proposals in the Birmingham Development Plan will generate significant new employment opportunities in the City by 2031 with the majority of new jobs being created in the six Economic Zones and the proposed industrial development at Peddimore. The Economic Zones will enable the clustering of high growth sectors important to City's economy such as financial and professional services and advanced manufacturing. A high quality transport system is also a major factor for businesses and developers when deciding where to set up their operation. Investors want to know that their employees will be able to get in to work efficiently and that they can easily access their markets locally and nationally/internationally.

In order to make these zones more attractive we must provide a transport system which moves people and goods as quality and efficiently as possible.

2012 Worklessness Levels

Birmingham Worklessness Rates - November 2012 Quarter



1 Birmingham's Local Economic Assessment, 2011, BCC

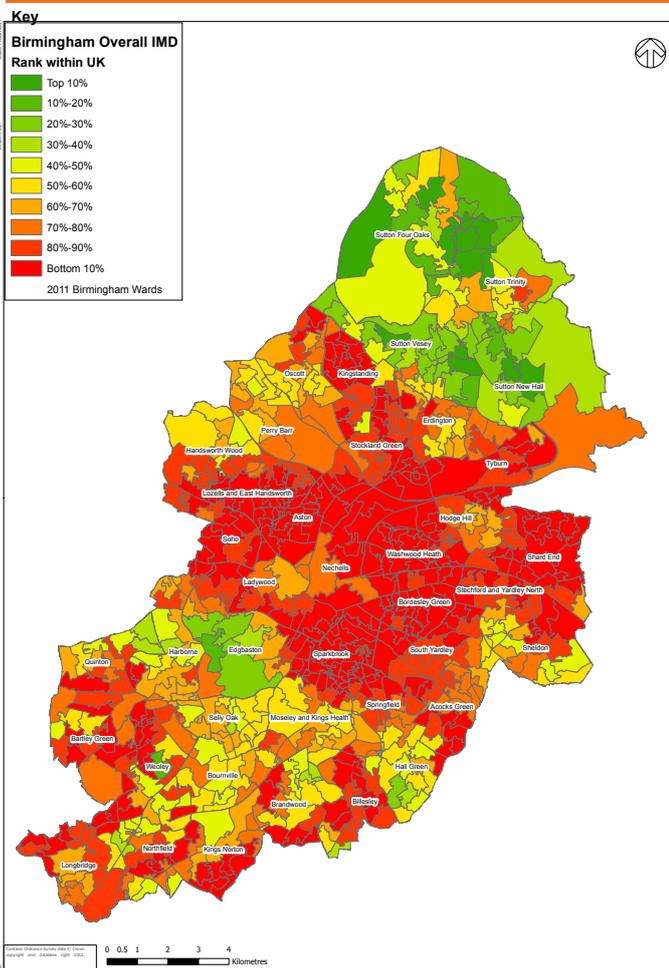
2 England's eight largest City economies outside of London: Birmingham, Bristol, Leeds, Liverpool, Manchester, Newcastle upon Tyne, Nottingham, Sheffield

Deprivation and Health

Birmingham is facing a number of challenges to improve the lives of some of its residents who experience high levels of social deprivation. Deprivation can have a number of root causes: low education levels; unemployment or low paid jobs; low household income; poor living environment; crime or exposure to crime and poor health. Birmingham has some areas suffering very high levels of social deprivation when compared to the rest of the UK.

Unfortunately the picture is very similar when considering just the health indicators linked to social deprivation. When compared to the wider UK, the health levels across the Birmingham area are significantly worse. A large proportion of the Birmingham area falls within the bottom 50% for health. Those areas where there are poorer health levels could benefit from the use of active travel modes for undertaking journeys in place of driving, in particular for shorter distance journeys.

IMD Social Deprivations Levels – Areas Ranked within UK



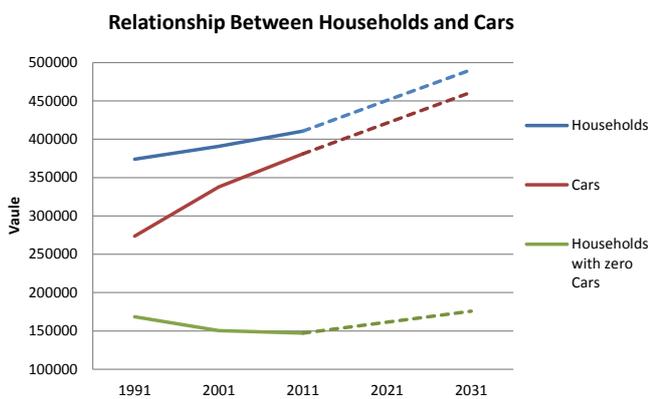
Car Ownership and Accessibility

Car ownership used to be a measure of deprivation, using the idea that without a car people are limited in their ability to access jobs and services. However, not owning a car is now a lifestyle choice aimed at reducing household costs and an individual's impact on the environment. Indeed, this is a lifestyle choice that BMAP hopes to further encourage across Birmingham. Currently around 36% of Birmingham households do not have access to a car.

BMAP recognises the challenge to provide a public transport system which enables Birmingham residents to access all areas of the city within reasonable journey times for the benefit of all. This will include those who do not own or have access to a car and those who want to reduce their car use or if they do they may want to use it less, for environmental, cost or health reasons.

The maps (page 14) demonstrate how car ownership has changed between the 2001 and 2011 census. The statistics show that the number of households who do not have access to a car has actually only decreased very slightly over the past 20 years. The major change has been in the number of multi-car owning households; with the biggest changes seen in areas such as Sutton Coldfield and Hall Green, with very little change in central areas.

This relationship is shown on the graph below. This also shows a potential projection for car ownership into the future. Based purely on ownership per household levels from 2011 (census) this shows approximately 80,000 more cars owned across the city by 2031. However, there is potential for this to be increased further if trends in car ownership per household actually continue.



Analysis of how well the current public transport system provides for people to travel around the city shows very different results depending on the area. For example, when looking at what proportion of the population can access the six identified Economic Zones (locations shown on map on page 57) within 30 mins there are very different patterns. The city centre is very well connected, with 75% of residents able to access it within 30 minutes; whereas only one of the other five can be reached by even 40% of the population.

It is recognised that accessibility to these areas is in part governed by their location, with Longbridge, for example, being at the very edge of the city. As such they will never be within an acceptable journey time of 100% of Birmingham residents. However, the more accessible they are within the city and to the West Midlands region, the more likely they will successfully achieve the Council’s aspirations for growth.

The challenge for Birmingham is to ensure that these areas have good links to both the future labour force and to their market places; providing efficient movement of people and goods.

Economic Growth Zones	Population of Birmingham within 30 mins accessibility by public transport.
City Centre Enterprise Zone	75%
Life Sciences Campus	33%
Longbridge ITEC Park	19%
The Food Hub	30%
Advanced Manufacturing Hub	41%
Tyseley Environmental Enterprise District	37%

A further piece of analysis has looked at the accessibility to jobs by public transport for some of the most deprived areas of the City. Some of the lower figures in the table below are for areas on the edges of the city (Kings Norton and Brandwood in particular), so it is natural that their accessibility to Birmingham jobs will be lower. They may have better linkages to jobs outside of Birmingham but because of this poor public transport accessibility into and around the city, residents of these areas have fewer choices to look for employment opportunities. This level of accessibility to job opportunities exacerbates social exclusion.

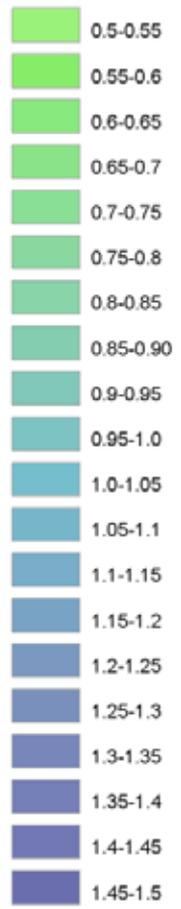
Deprived Area	Percentage of Jobs in Birmingham within 30 mins public transport
Brandwood	8%
Kings Norton	25%
Nechells	55%
Soho	55%
Sparkbrook	60%
Washwood Heath	55%
Yardley	44%

Changes in car Ownership Between 2001 and 2011.

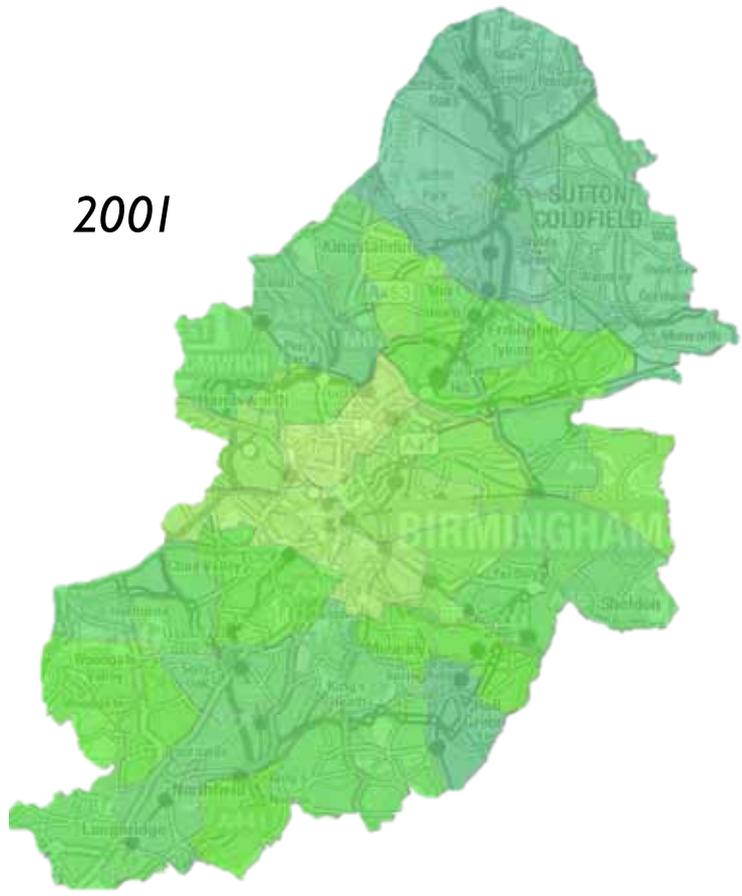
Key

Average Car Ownership

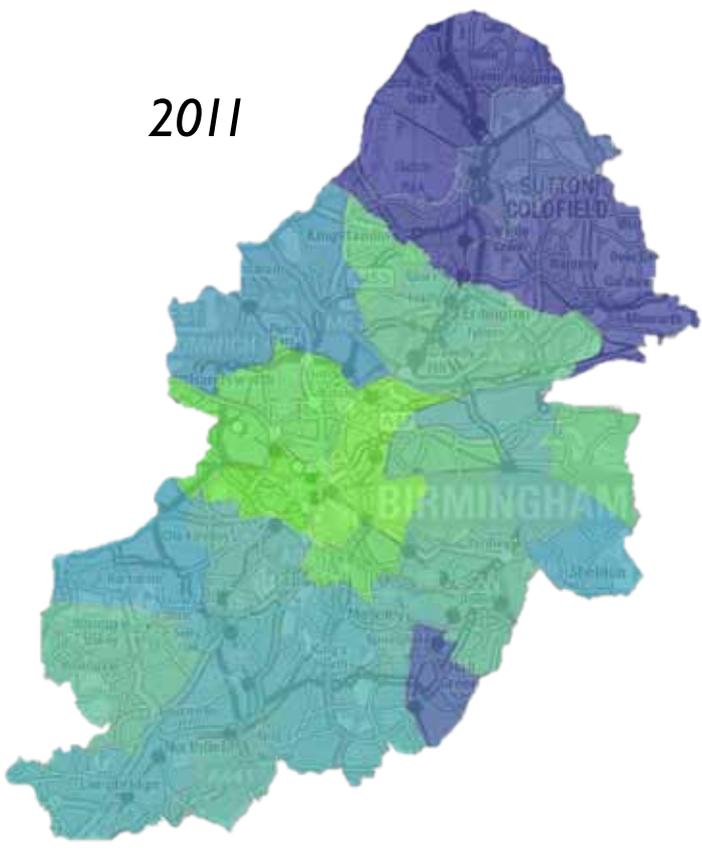
2011: Cars Per Hhld



2001



2011

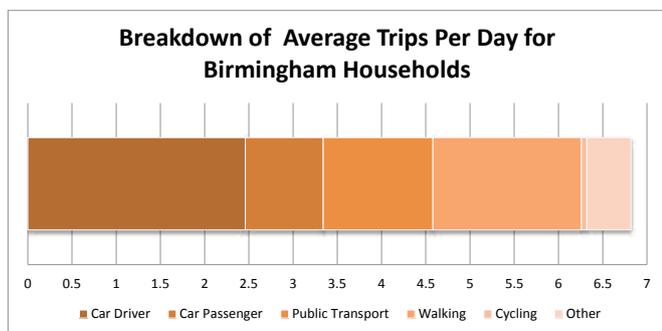


Contains Ordnance Survey data © Crown copyright and database right 2011

Current Travel Behaviour

A recent survey of a sample of 4,500 households in the West Midlands, of which 1,800 were in Birmingham, provides some insight as to how people currently travel (West Midlands Household Travel Survey, 2011).

The average Birmingham household generates 6.82 trips per week day, for a variety of different purposes. In this case a 'trip' is a single direction; so a journey to and from work would be two trips. These figures also include trips made external to the home, e.g. a trip from work to the shops on the way home.



Including travelling as a passenger, half of all daily trips by Birmingham residents are undertaken by car. To a certain extent there is also a positive message to this, in that almost half of daily trip making is undertaken using more 'sustainable' modes (walk, cycle or public transport). However, there are certainly opportunities to reduce car use from such a high base.

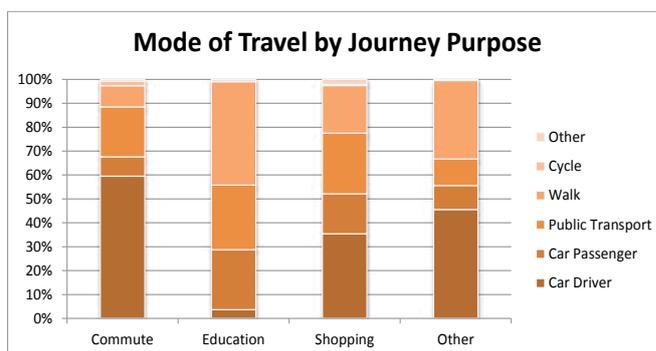
Multiplied by the total number of households in the city (410,736 from the 2011 census), these figures equate to just over one million car trips (using 'car driver' trips only) in an average weekday made by Birmingham residents; or five million in a working week.

3 2011 Census Data

It should be noted these averaged figures include the 36% of Birmingham households which do not have access their own car³; meaning that the households that do are actually making 3.8 trips per day or 19 trips per week by car. *If we can persuade these householders to change their travel behaviour to an alternative mode for just 4 of these weekly trips (or more simply, 2 return journeys) then we will on average have shifted around 210,000 car trips from the city's roads every week-day.*

A key part of BMAP will be to communicate how everyone can contribute to its success by simply questioning the necessity of each car journey they make. By changing habit for just a small number of trips, collectively the citizens of Birmingham can have a big impact.

If we look at home-based trips (i.e. only those which either start or end at the home) then there are four main journey purposes: Commuting, Education, Shopping and Personal Business. Each of these show very different transport mode share breakdowns. Almost 70% of all commuter trips are made by car (either as driver or passenger), whereas this figure is just over 50% for shopping trips and 30% for education. The Birmingham transport system needs to improve the alternatives to cars so that people are willing and able to travel by other means.



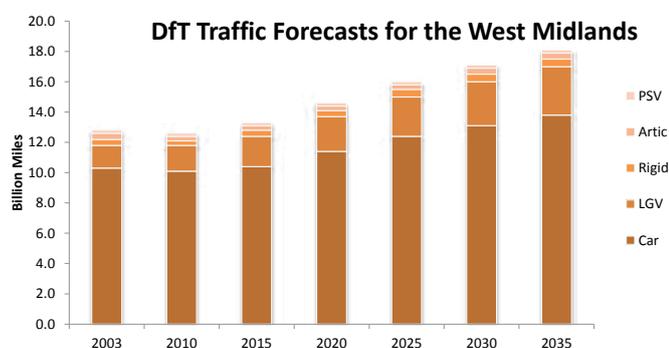
Impacts from an Over Reliance on Cars

In common with most cities across the world, Birmingham suffers from the impacts of a heavy reliance on cars for daily trip making. In many cases people do not consider that there is a viable alternative to driving their car, but, in driving, they are affecting the journeys of other car drivers, people on public transport, deliveries of goods and services, cyclists and pedestrians. In an ideal integrated, sustainable urban transport system people will recognise that there are several choices involved in making journeys and hopefully using the car isn't always the first choice.

Congestion

Traffic congestion in Birmingham is often cited by residents as being a significant cause for concern; 45% of residents state that they experience congestion when travelling to work either every day or at least once a week⁴. A study in 2008⁵ suggested that congestion was costing the West Midlands economy as much as £2bn a year and as stated previously, DfT forecasting indicates that congestion could worsen by as much as 83% by 2035.

Shown by the average speeds on the adjacent maps, congestion in the city causes a significant reduction from free-flowing speeds. The majority of public transport in the city is buses, which use the road network, so they also get caught up in traffic congestion and delays, and are less attractive as a result.



Road Traffic Collisions

A further consequence of our busy roads is the number of collisions and casualties. Birmingham roads witnessed around 2,200 road traffic collisions in 2012, of which approximately 400 resulted in people being killed or seriously injured. Whilst there is a downward trend from the past 5 years; these figures still represent approximately a £220M impact on the local economy from lost output and damage.

The Environment and Health

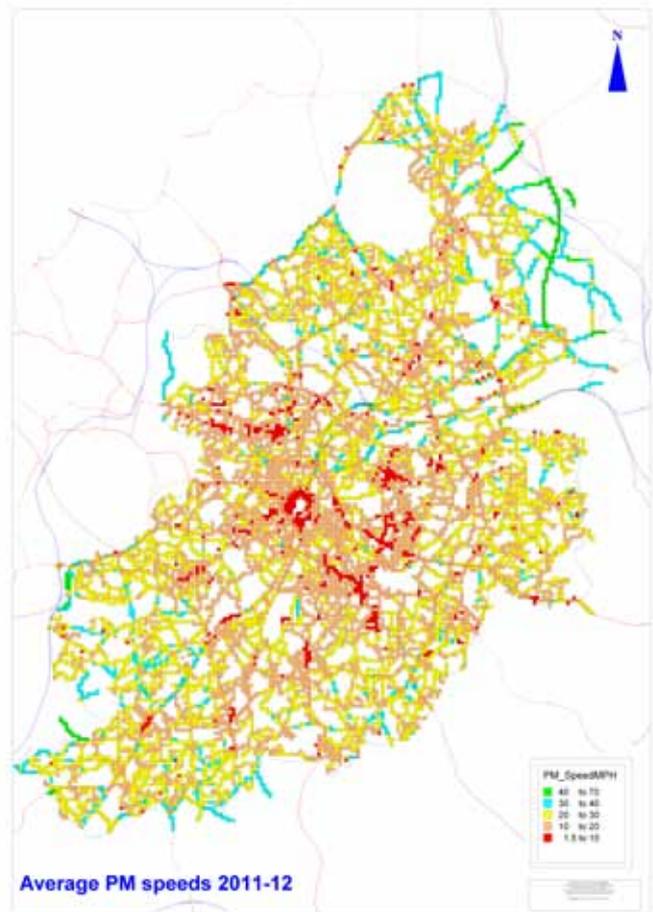
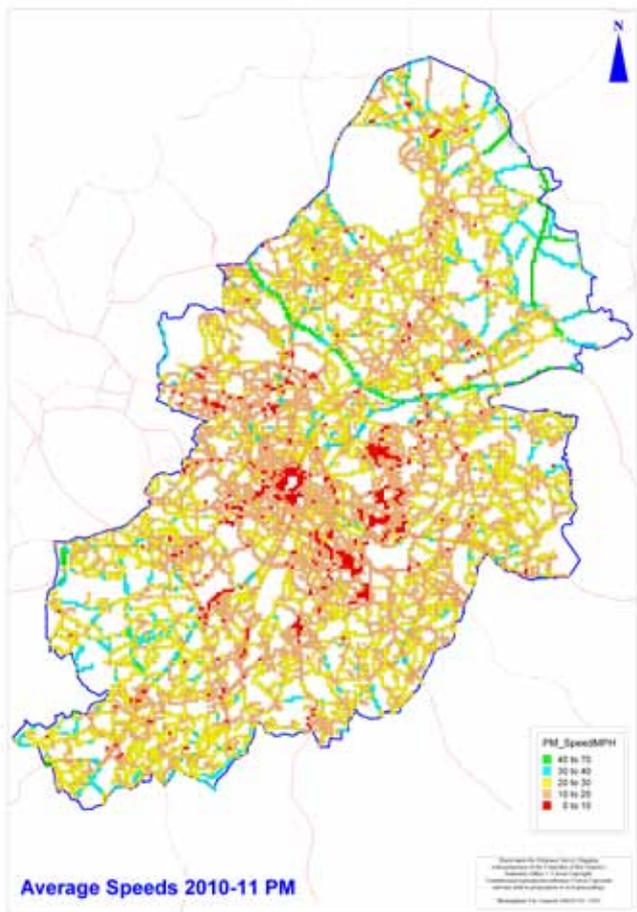
Road transport contributes a quarter of the city's carbon output. We have a target to reduce the city's carbon emissions by 60% by 2026 (from a 1990 base). Tackling the transport contribution to this is a major component of the overall strategy. It is not just cars which contribute to issues with emissions, a reliance on diesel powered buses for the backbone of the public transport network is also an issue which needs addressing. For example, Greater Manchester has almost 250 hybrid electric buses currently on its network whereas the West Midlands has only 50, with fewer than 20 of those operating in Birmingham.

Transport is the single biggest contributor to air pollution levels in Birmingham with cars, lorries and buses putting a number of different substances into the air we breathe. These include particulates (PM10/2.5) which have been associated with a number of health effects including respiratory and cardiovascular issues, such as asthma and increased mortality. One of the other more harmful chemicals produced by road traffic is nitrogen dioxide (NO²) which has been linked to lung and respiratory diseases. The level of traffic on our roads contributes to these chemicals in the air but the concentration of traffic exacerbates the issues. Congestion causing stationary traffic and very slow speeds, significantly reduces the efficiency of vehicle engines, causing even more pollution to be emitted.

4 Birmingham Transport Survey (2013), BCC

5 West Midlands 'Gridlock or Growth': Congestion Management Study

Travel speeds at peak times where red indicates significant delays from free-flow speeds.



These maps demonstrate that there are large sections of the network where traffic congestion is causing very slow speeds, down below 20mph, and many pinch points where traffic comes to a virtual standstill. Congestion impacts many aspects of the daily lives of the Birmingham’s residents and businesses. It not only affects our economy by delaying business movements and goods but it also adds extra time to our working day that we could use for other leisure and social activities. Added to this is the extra carbon and air pollution caused from vehicles travelling at very low speeds or not moving at all.

Road congestion doesn’t only impact on people driving. It also impedes the movements of people on public transport, walking and cycling. The average car occupancy in Birmingham is around 1.2 people, which means that the vast majority of cars are only carrying a single person. Individual people travelling in cars uses a significantly higher amount of road space than the equivalent number of people on buses or bikes and every additional car exponentially adds to the problems.

PART A – SETTING THE SCENE

A2 – THE VISION FOR BIRMINGHAM

The Birmingham Development Plan sets an overall vision of how the city will be in 2031:

“Birmingham’s residents will be experiencing a high quality of life, living within attractive and well-designed sustainable neighbourhoods. The choice and affordability of housing will be meeting the needs of all and local jobs and services will be accessible through a range of sustainable transport choices.

“The City’s economy will be strong and prosperous built around a diverse base of economic activities and supported by a skilled workforce. The City Centre will have expanded accommodating major new prime office developments and a series of exciting destinations boosting the cultural, leisure and retail offer. The network of thriving local centres will reflect the diversity of the City and the needs of local people.”

BMAP has a key part to play in helping the city to realise this ambitious vision. We have already described how important transport and mobility are to both the local economy and society in general; BMAP provides the direction for how the transport system can help deliver a prosperous future for Birmingham.

Birmingham cannot afford to do nothing and nor do we simply want to maintain the status quo; the aspiration is for a fundamental change in the way that transport is viewed and used.

To describe how BMAP can contribute to an improved future for Birmingham we can consider three different scenarios for mobility.

Each scenario will see a change from today’s transport system but achieve different degrees of success towards the goals of BMAP. They each present a view as to what Birmingham’s transport system could be like in the future. The scenarios are:

1. **‘Business as Usual’**, which see very little change from the investment priorities of the recent past. New infrastructure will be provided in response to the growth in population and jobs but almost all of the current problems from the over reliance on cars will prevail;
2. **‘Direction Change’**, which sees the continuation of currently emerging strategic and economic developments and new emphasis on the promotion of walking and cycling as viable alternatives to private car use; and
3. **‘BMAP Vision’**, which will see a radical change of direction for Birmingham’s development and public perception of the transport network. This is a holistic view of the transport system, identifying how each part can contribute to the success of the whole. It also represents an accelerated programme of investment.

1. 'Business As Usual'

This scenario sees very little change from the investment priorities of the recent past. It must be remembered that the city is predicted to grow by as much as 150,000 in population by 2031, so even if today's split of transport use is retained there could be around 200,000 additional car trips on the city's roads every weekday. There is even a chance that this figure could be higher as household size reduces and the number of cars owned across the city increases. It is also anticipated that more people will be travelling in from outside the city every day for work; currently over 60% of these trips are by car.

With more cars on the road there are likely to be increases in road traffic collisions, congestion, harmful air pollution and carbon emissions.

There will be gradual investment in the transport system, specifically those schemes identified in the Birmingham Development Plan (BDP) as being essential to achieve growth targets. However, there will be no additional emphasis on achieving a high mode share for sustainable transport.

Most aspects of daily travel will remain as they are today. There will still be very high levels of car use, particularly to/from areas outside of the city centre. Crossing the city by public transport will be less attractive due to poor connectivity or services and poor interchange experiences. The most deprived areas of the city will unfortunately still be poorly connected to jobs and services.

Capacity on public transport at peak times will also become a serious issue. Most trains arriving at the city centre will be over crowded; resulting in some people switching back to their car, even if that means sitting in a traffic jam. Whilst many of the main bus routes will remain well used, if priority is not provided over cars they will struggle to attract new users. Even if additional buses are put on at peak times to cope with any additional demand, eventually there will not be sufficient space for them all to use the five bus interchanges in the central area.

Cycling will remain a low priority, with little in the way of investment in safer routes. As a consequence very few people will ride, remaining at today's 2% figure. This will mean that people do not take advantage of this easy form of exercise and many of today's health problems will remain.

2. 'Direction Change'

Under this scenario the city increases the emphasis on sustainable transport choices, investing in new infrastructure to meet higher mode share targets. However, whilst many radical solutions are considered more often than not the easy 'quick-win' options are selected. Whilst in general the transport system is better than today, there is still an over reliance on private car use and a focus on the city centre for public transport.

Public Transport investment will only be in key corridors accessing the city centre which provide the 'easiest' means of achieving improved service, without impacting heavily on capacity for private cars. This will inevitably mean a disparity in quality depending on where you live. There will be a network-wide smart card system for travelling on all public transport across the city and likely the West Midlands Region. However, interchanging between modes will still be difficult as networks, timetables and fare structures remain disconnected.

Cycling will be given a far greater emphasis, particularly servicing the city centre. The network and other plans set out in the Cycle Revolution document have been delivered and cycle mode share rises to around 5 to 10% for trips to this location. However, the network servicing other locations in the city is still patchy and not likely to attract significant numbers of users. Unfortunately this means that cycling across Birmingham as a whole still remains low.

Overall there is improvement towards targets for sustainable transport use, reduced collision levels and economic impacts. However, Birmingham still lags behind many of its contemporary cities in the UK and Europe in statistics for mobility and general 'liveability'.

3. 'BMAP Vision'

Under this scenario people will see the transport system in a completely new way. The aim will be to create a comprehensive system where each distinct element works both separately and together with others. The system as a whole raises the standard of living for all residents. **A illustration of this integrated system is shown overleaf.**

Crucially, it must be recognised that this scenario is not aiming for a reduction in travel times for private cars; although it would be hoped that this could be a by-product, achieved through significant modal shift. Instead the transport system will be considered as a whole and decisions made which will benefit the majority of users, as well as helping to meet targets around aspects such as social equity, reduced carbon outputs and air quality, health and urban realm.

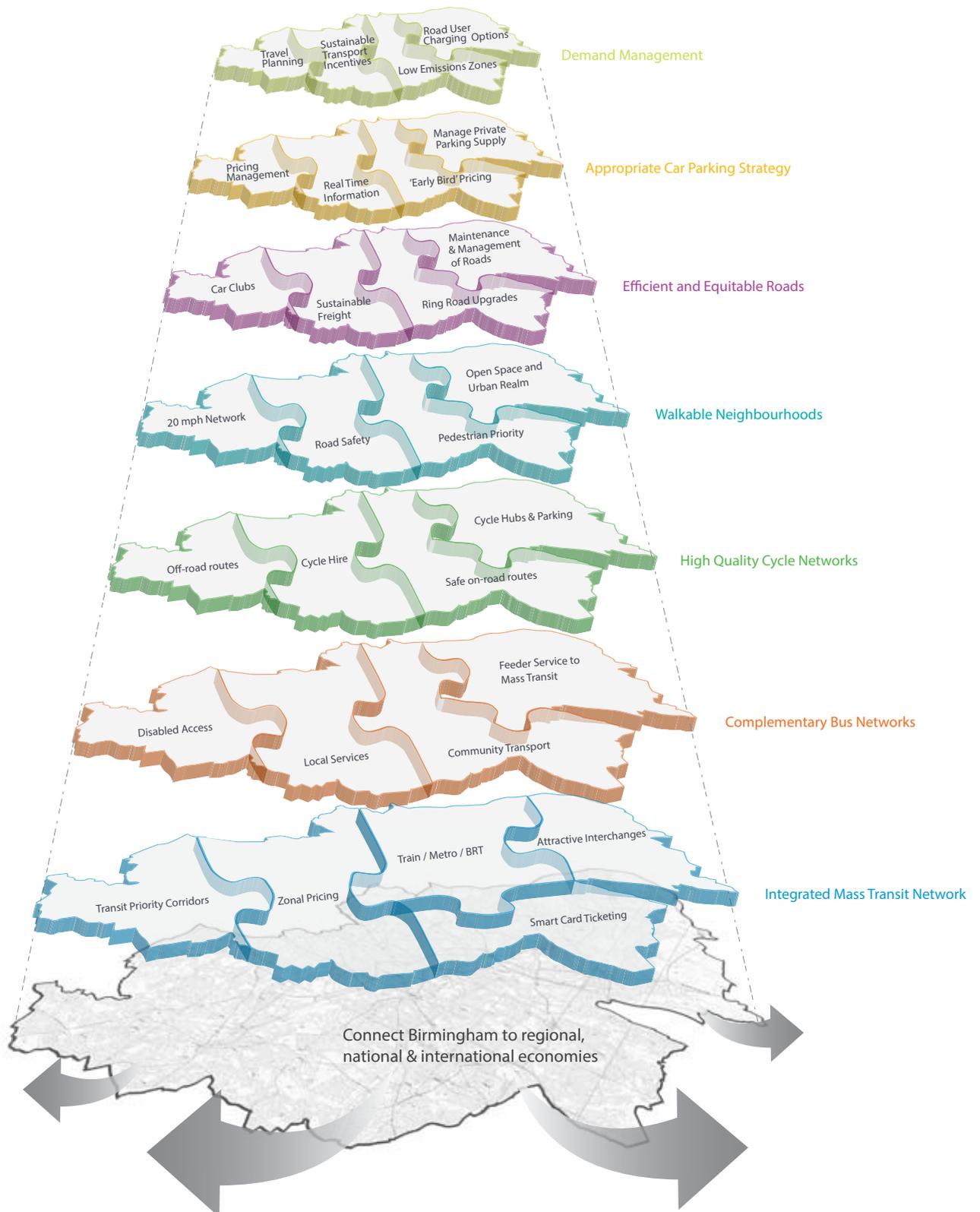


The aim will be to create a truly integrated sustainable transport system. The benefits of which will be:

- Fewer cars on the road than today, despite significant population growth;
- A public transport system which enables people to easily and quickly access all areas of the city;
- Safer roads for pedestrians and cyclists;
- An improved network of Public Rights of Way (PROW), providing safe, convenient off-street routes for pedestrians and cyclists;
- A vibrant city centre no longer segregated by noisy, busy roads;
- A city where people can easily live without feeling that car ownership is essential, aspirational or the norm;
- New funding opportunities streams have been identified which can support the further development of the system.
- All residents have easy access to jobs, shops and leisure opportunities; with a range of travel choices available for the majority of daily trips.
- Increasing numbers of people think first about either walking or cycling their journey before considering other forms of transport.
- The mode of choice for people travelling into Birmingham from outside the city is public transport.
- Birmingham is seen as a great place to do business because of fast and reliable journey times for employees, business trips and goods.

BMAP will strive to take Birmingham towards this 'Visionary' scenario.

An integrated transport system – how each piece of the jigsaw contributes to the whole



Vision and Objectives for BMAP

BMAP is the starting point for a future holistic vision for Birmingham's transport system. In this document we present a plan for improving the lives of our citizens. The developing plan looks at all facets of mobility, aiming to stitch them together to create an integrated system which considers all users. BMAP's vision for Birmingham is:

“BMAP will reinvent Birmingham's transport system to meet current and future mobility challenges; facilitating strong and sustainable economic growth.

The plan will change the way that people and business think about travel into and around the city. By influencing travel behaviour and embracing technological change we will reduce carbon emissions, increase safety and improve people's lives.”

To achieve this vision, BMAP has set five clear objectives:



1. Equitable Birmingham - BMAP will facilitate a 21st Century transport system; linking communities together and improving access to jobs and services.



2. Efficient Birmingham - BMAP will help to facilitate the city's growth agenda by moving people and goods in the most efficient and sustainable way possible; strengthening our economy and boosting jobs.



3. Sustainable Birmingham - BMAP will reduce the impacts of greenhouse gas emissions and energy consumption from transport, as well as ensuring the most sustainable use of city resources.



4. Healthy Birmingham - BMAP will contribute to a general raising of health standards across the city through the promotion of walking and cycling, the reduction of air pollution, and improved safety for all users.



5. Attractive Birmingham - BMAP will contribute to enhancing the attractiveness and quality of the urban environment: in local centres, key transport corridors and the city centre.

The targets and initiatives presented through out the document will be linked back to these objectives using the five symbols shown above.

BMAP's Targets and Aspirations for Change

BMAP wants to achieve real change for Birmingham, not just in the scale and quality of the transport system in the city but also to help improve the daily lives of residents. Through the initiatives put forward later in this document, BMAP hopes to achieve the following for Birmingham:

Reducing car use

An over reliance on cars is causing a number of serious issues for Birmingham, as it does for almost every urban area in the world. The impacts are set to worsen in the future as we move further out of the recession and population rises; both of which could put more cars on our roads. The existing and future problems have been described previously in this section and are presented in further detail in subsequent sections. However, the scale of the task may not be as great as might be first thought. BMAP's analysis has shown that if households who own a car can use alternative modes for **just 2 return journeys** (Monday to Friday), then this will **remove around 200,000 car journeys every weekday** from the city's roads. This is approximately the same number of new car journeys predicted to be added to Birmingham's roads by the 2031 forecast population growth. It is BMAP's aspiration to reduce car use from today's levels, rather than maintain it, but this analysis does demonstrate that small changes at a household level can have significant cumulative benefits to the city as a whole.



In this context BMAP would hope to achieve:

- Continued reduction in car use for travel to the city centre, particularly at peak times. Cars represent around 40% of trips to the centre in the morning peak. With the predicted growth in the centre, in its economy and the number of jobs, then even if BMAP manages to reduce the mode share to 30% then this will still be approximately the same number of cars as today. BMAP's target therefore is by 2031 to have fewer cars crossing the ring road cordon in the morning peak than there are in 2013. This target has knock-on impacts for the public transport system, which will need to cope with tens of thousands of extra trips at peak times.
- Identified Green Travel Zones (discussed in Part B) to demonstrate a less than 50% car mode share for commuting. This compares with a current average of around 70% for areas outside of the centre. It is hoped that these zones can become shining examples of what is achievable with a combination of intensive travel planning and dedicated infrastructure.
- A significant reduction in short distance trips being made by car. Analysis has shown that Birmingham residents make approximately 250,000 car journeys every day which are less than one mile. BMAP hopes to create an environment where people see that there are safe and attractive alternatives to driving such distances, preferably a healthier option to walk or cycle, and that driving no longer becomes the first choice.
- Create the conditions in the city where people actively choose to either not own a car at all or that 2nd and 3rd cars for the household are unnecessary.

Increasing accessibility for all residents, particularly by public transport

Birmingham has much to offer its citizens; there are over half a million jobs in the city, top-class shopping and leisure opportunities, cultural and learning experiences, vibrant local centres with their own unique character and some fantastic open spaces which can be enjoyed by all. However, getting access within a reasonable journey time to all that the city has to offer, using anything other than a car, can be difficult. BMAP wishes to improve this by proposing a simple, reliable, fast and safe public transport system which will enable people to access all areas of the city. In particular it seeks to combat social inequality by providing much improved accessibility to the most deprived areas of the city.

The aspiration would be that the vast majority of residents are able to access almost anywhere in the city within a maximum journey time of 45 minutes, even at peak times. The system should be able to connect any area of the city to any other within a maximum of two, but for the majority of locations just one, interchanges between connecting services; and that the interchange is also simple, reliable, fast and safe.



Improving health through increased active mode choice

It has been shown that around a quarter of all car trips made by Birmingham residents are less than one mile. Whilst recognising that there will always be some residual reasons for doing so, such as impaired physical mobility or linking a short trip with a much longer one, BMAP is targeting these trips to try and engender positive behaviour change towards walking and cycling. The aim is to identify the barriers to people currently choosing active modes and eliminate them through a combination of providing safe infrastructure, incentives and marketing/promotion. It is hoped that a package of measures can continually reduce this figure by 2031, from 2013 levels. This target takes into account forecast increases in population which would naturally raise these short distance trips if nothing is done.

Cycling currently stands at less than 2% mode share for all trips made by Birmingham residents. BMAP includes the plans and aspirations from the Birmingham Cycle Revolution strategy which has recently been awarded funding from the DfT. This strategy sets an initial target of increasing this mode share to 5% and then over a 20 year period for it to rise to 10%; which would be comparable with many continental cities. Cycling is a suitable alternative to almost any current car trip, but in particular BMAP and the Birmingham Cycle Revolution strategy are aiming to increase distances travelled in order to raise general health levels. Currently around 75% of cyclists travel less than 3 miles; BMAP aims to encourage more people to view distances of up to 5 miles as 'cyclable'.

Walking is already a 'mass mode', accounting for around 25% of daily trip making. However, BMAP aims to encourage people to walk more and further. Similarly to cycling, the aim would be to encourage people to view distances of up to 2 miles as easily walkable.

Improved air quality and reduced climate impacts

BMAP has a significant part to play in helping Birmingham meet its targets and obligations for reduced carbon and air pollutants. The city's 'Green Commission' sets out a road map for reducing carbon emissions by 60% (from 1990 levels). It is estimated that transport contributes around a quarter of all carbon emissions. Reductions will come from fewer cars on the roads but there also needs to be a shift towards low carbon vehicles; for both public and private transport.

The city has an Air Quality Action Plan (AQAP), the latest draft of which was published in 2011, which sets out the targets and plans to reduce harmful air pollution levels in Birmingham. The plan recognises that road transport contributes the vast majority of pollutants such as lead nitrogen dioxide and particulates (PM10). All of these can cause significant health problems when in high concentrations. The work done to develop the AQAP demonstrated a number of locations across the city where levels of pollutants are reaching or exceeding recommended levels. Interestingly, in many cases cars are not the biggest contributor to the problem. Buses and HGVs can contribute higher levels of some pollutants; despite them being only around 20% of total traffic. BMAP puts forward a number of initiatives which could significantly reduce the pollution coming from these two vehicle types.



Improved safety for all trips

BCC already has targets to reduce road traffic collisions across the city. One of these currently stands at reducing the number of 'Killed and Seriously Injured' events to an average of 394 between 2011 and 2015. BMAP hopes to create the conditions for that figure to reduce even further. This can be achieved through two means: firstly through continued investment in safer roads, particularly on local high streets and providing dedicated infrastructure for pedestrians and cyclists; and secondly through the reduction in the number of cars on the roads by encouraging use of alternatives.

For BMAP 'safety' doesn't just refer to road traffic collisions. There is a growing issue, whether it be real or perceived, that travelling on some forms of public transport can be unsafe or threatening to some vulnerable users. BMAP's vision is for an equitable system that is open to all and provides the necessary safeguards to ensure that the majority of users do not suffer from anti-social behaviour of a small minority.



How can Birmingham Learn from the Rest of the World?

If we want a transport system to be proud of, lessons can be learnt from how other cities are approaching the same issues. As part of the development of BMAP the study examined eight cities which are recognised as leaders in the field to see what Birmingham could learn. The cities were:

- Stockholm
- Zurich
- Lyon
- Amsterdam
- Madrid
- Chicago
- Montreal
- Osaka

From this review six key characteristics were identified for a world class transport orientated City.

Characteristic of a global transport oriented city	Observations from the case study review
A dense mass transit network provides the spine	<p>Many of the cities examined were of a similar size to Birmingham, or at least sat within a metropolitan area similar to the West Midlands. Even cities of this size have transit systems which have a dense network of lines, stations and interchanges servicing the city. Amsterdam for example only has a population of 750,000 but has a metro system with 78 stations city wide.</p> <p>Also, mass transit systems do not all have to be the same mode. For example, in Lyon the system consists of underground metro, trams and electric trolleybuses. These all work together as a coherent system and people regularly interchange between them to complete their journey.</p>
Buses fill in the gaps	<p>Each of the cities examined has not simply replaced buses with mass transit, they all still have large bus networks which service less densely populated areas that mass transit cannot cover. Some bus services are integrated with the mass transit to get people into the network, some access locations not covered by mass transit and others provide alternative means of accessing central areas.</p>
Integrated ticketing pulls the system together	<p>Another common factor across all these cities was that they all have a smart card ticketing system that allows travel and seamless interchange on the majority, if not all, of the public transport network. A number of the cities have also integrated these smart cards with other initiatives, such as cycle hire schemes, car parking or incentives/discounts at shops, restaurants and leisure activities.</p>
City centres are for people and not cars	<p>Many of the cities reviewed have made conscious efforts to dissuade people from driving into central locations. This is through a combination of providing the transport system required to manage demand and change travel behaviour through initiatives such as very low speeds, one-way systems, high parking prices for commuters, 'car free' days in Osaka where public transport costs are slashed for one day a month or in Stockholm's case a cordon congestion charge manages car demand to the central area.</p> <p>The results of these policies is that the central areas of these cities are pleasant and attractive places, largely car free and yet they are still vibrant commercial centres.</p>

Characteristic of a global transport oriented city	Observations from the case study review
Road space is a valuable commodity to be shared	<p>At least four of the examined cities have reduced car carrying capacity on certain links in order to give priority to public transport and thereby move the most amount of people for the least amount of space. It is recognised and accepted by all that certain routes are designated for public transport priority. In Lyon some roads have had more than half of their carrying capacity given over to public transport.</p> <p>It is also accepted in these circumstances that less priority for cars is not only a byproduct of such a policy but in some cases it is necessary. Public transport needs to have a level of service high enough to become an attractive alternative to driving.</p>
Walking and cycling are key modes	The health benefits from more people cycling and walking are well documented. The case studies (particularly the European ones) have demonstrated some of the initiatives, infrastructure and culture changes which are needed to realise those benefits.

Structure of BMAP

This document is structured around three overarching themes, used to describe the vision for transport in Birmingham for the next 20 years. These themes are:

Theme	Key Aim	Anticipated Benefits
Improving Strategic Connectivity-City-wide and Across the Region	To facilitate Birmingham’s economic development by improving movement within the city, to/ from the West Midlands Region and the UK/Europe	<ul style="list-style-type: none"> Economic growth <ul style="list-style-type: none"> Growth Zone Strategy Reduced worklessness Reduced deprivation Attractive investment opportunities Strengthen’s city’s place in the ‘City Region’ Key part of meeting carbon, air pollution and public health targets Maximises opportunities presented by HS2
Improving Connectivity and Safety for Local Communities	To improve safety and encourage walking for trips within two miles and cycling for trips within 5 miles; along both the on street and off street networks.	<ul style="list-style-type: none"> Reduced social exclusion Reduce the need for travelling further than necessary to access key local services Improved health through more walking and cycling Improved urban realm in local centres
Improving Connectivity to and within the city centre	<p>To maximise the benefits which can be realised from reducing the reliance on private car use both to the City Centre and then within it.</p> <p>Establish cycling as a flagship for liability, social inclusion, sustainability and fun.</p>	<ul style="list-style-type: none"> Facilitating growth plans (40,000 jobs and 13,000 homes) Freeing road space for alternative uses: <ul style="list-style-type: none"> Improved environment/public realm Greater level of priority for road-based public transport Important cycle infrastructure Greater connectivity between locations within the city centre <ul style="list-style-type: none"> Reducing barriers to movement, particularly for pedestrians and cyclists Greater public transport penetration into the heart of the city centre Key part of meeting carbon, air pollution and public health targets

PART B – THEME I: IMPROVING STRATEGIC CONNECTIVITY – CITY WIDE AND ACROSS THE REGION AND BEYOND

BI – CONTEXT

This section firstly examines how Birmingham residents travel around the city, including the distances they travel, the journey purposes and the modes they use. There is also greater detail on some of the challenges faced by the city now and in the future. Having established the issues the section then goes on to provide some suggestions for potential solutions to help improve the efficiency of moving people and goods around Birmingham and to/from the region and the rest of the UK.

Solutions include a vision for a comprehensive public transport system which would transform the city and how people travel to it; a step-change in provision for cyclists with an anticipated significant increase in participation; and a strategy to intensively target large employment sites with integrated packages of measures aimed at reducing road traffic demand, increase walking and cycling and reducing freight impacts. Nothing presented in this section should be read as final solutions. It is recognised that there is a significant amount of technical detail required to understand exactly how to deliver the vision.

As has been shown, the city is facing challenges in the future. The forecast growth in population and jobs and the continued reduction in the cost of car use are expected to increase road congestion levels by as much as 83% by 2035. The city must be ready for these challenges and have a strategy in place to combat them.

This theme identifies strategies for keeping the city as a whole moving, as well as ensuring its connectivity to the West Midlands Region, the UK and beyond.



Understanding Cross-City Travel

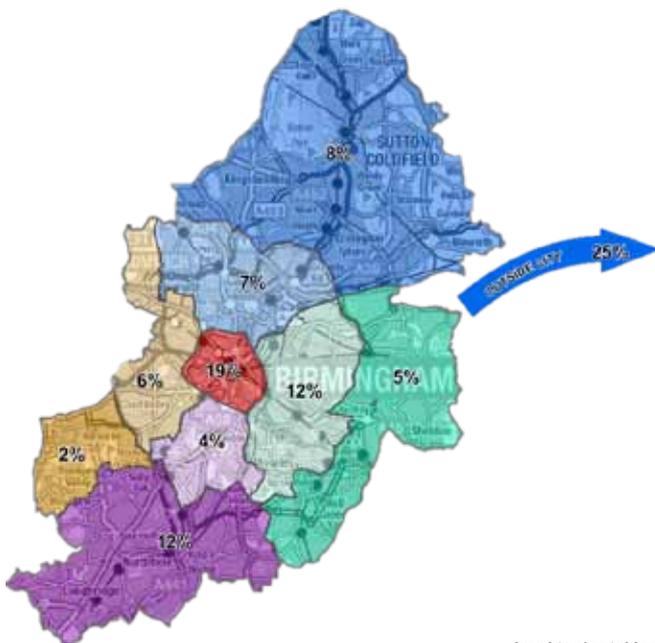
Public transport in Birmingham is very focused on the city centre, although there are a number of well-established bus routes that provide orbital services that connect various areas around the city. Nevertheless, very few services travel across the Centre to other parts of the city, and the process of changing from one bus service to another in the city Centre has been made more complex and difficult by new terminal arrangements around the periphery of the core central area. However, when analysing data on where Birmingham residents travel to work it is evident that the city centre accounts for only 19% of commuter trip making. 45% of residents travel to locations other than the city centre, and 25% travel outside of the city completely. In order to meet its objectives BMAP must therefore develop plans to enable these cross-city movements to be more easily made by public transport, whilst recognising that cross-city bus services can only operate reliably if extensive bus priority measures are implemented.

It is also interesting to look at how far people are travelling to get to work. Once again, the household travel survey provides us with some insight to this. The analysis provides some insight into areas BMAP should be targeting:

- Over 40% of residents living in inner areas drive less than 3 miles to work every day. This is approximately a 15 minute cycle ride.
- People do not typically travel long distances by bus, but are more willing to by train. The more attractive (in terms of reliability, journey times and overall quality) a mode of public transport is the further people are willing to travel on it.
- Residents of the most outer areas of Birmingham travel further for most trip purposes and are also more likely to drive. BMAP needs to not only supply the appropriate public transport and active travel infrastructure but also needs to actively seek ways to influence people’s travel behaviour so that the car is not always the first choice.
- There is significant demand for movement to areas other than the city centre, but currently the public transport system does not adequately cater for this demand.

Average Distance Travelled by Trip Purpose (miles)					
	Commute	Education	Leisure	Shopping	Average
City Centre	3.63	2.26	0.59	1.57	2.52
Inner East	3.26	1.67	1.81	1.55	2.18
Inner North	3.76	1.85	2.49	2.22	2.62
Inner South	3.91	1.92	2.07	1.75	2.60
Inner West	4.13	2.25	4.46	1.70	3.08
Outer East	4.42	2.06	2.89	2.23	2.93
Outer North	5.03	1.79	4.59	2.15	3.41
Outer South	5.44	2.14	2.67	2.62	3.64
Outer West	4.80	2.15	3.14	3.47	3.74
Average Across City	4.44	1.94	3.02	2.22	2.99

Destinations for Birmingham Commuters



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Commuters from Outside Birmingham

Birmingham plays a central role in the West Midlands region and the metropolitan districts in particular. It is estimated that of the approximately 500,000 jobs located in Birmingham, over 150,000 of these are taken up by people living outside of the city’s boundary⁶. This results in a very large number of trips per day travelling into the city.

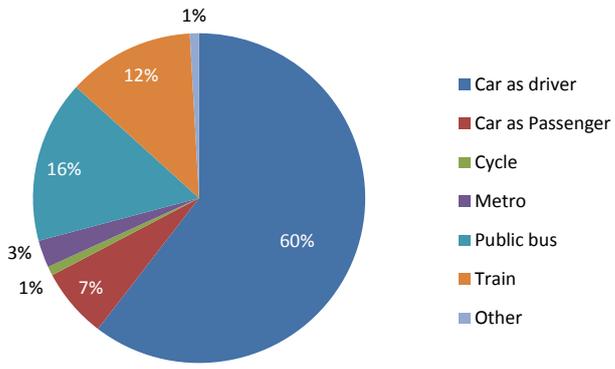
The Household Travel Survey (HTS) reveals that around 16% of all daily commuter trips made by all residents of the other six West Midlands Metropolitan Districts are to Birmingham. This equates to approximately 168,000 trips (Single Direction) each weekday.

67% of these commuters travel in by car (either as driver or passenger). This equates to 100,000 car trips into and out of Birmingham each weekday by commuters from the other Metropolitan Districts. The destination analysis shows that whilst 35% of these commuter trips travel to the city centre, 65% of them destinate elsewhere in the city; this again highlights the importance of not solely concentrating on the city Centre.

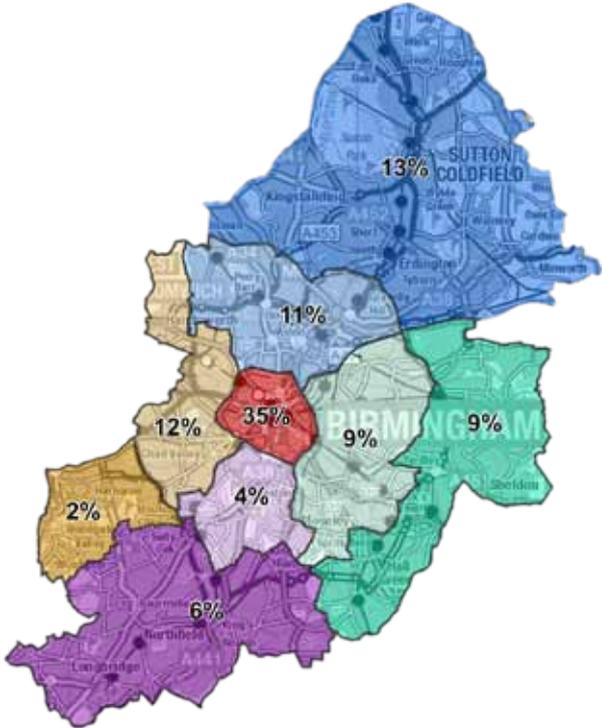
Household Travel Survey – Breakdown of Trips to/from Birmingham from other West Midlands Metropolitan Districts

District	Percentage of all In-Commuters
Coventry	8%
Dudley	14%
Sandwell	30%
Solihull	32%
Walsall	12%
Wolverhampton	5%

Mode Share for Commuter Trips to/from Birmingham by People Living in other 6 WM Districts



Destinations of Commuters Coming from Outside City Boundaries



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Strategic Road and Rail Issues

Birmingham has a significant advantage compared to most other areas of the UK. Its geographical position means that it is within four hours of 90% of the UK's population and business. That is significantly more than the South East, or the metropolitan areas of the north. However, in order for the city to take full advantage of its location, certain issues need to be overcome. There is significant daily congestion on the motorway 'box' which surrounds the city. This not only impacts on the daily lives of Birmingham residents but has significant impacts on local businesses attempting to move people and goods, making the city and region less attractive to new investment.

The M6 was originally built with a design capacity of around 72,000 vehicles per day. The volumes today between junction 6 (A38M) and junction 8 (M5) running through the heart of Birmingham are over 130,000 vehicles. Conversely, the M6T, which was built to relieve the M6 along its busiest sections, was designed for 72,000 vehicles but currently carries only half that.

Road congestion in the West Midlands is estimated to cost the local economy over £2bn per year (Gridlock or Growth? Congestion Management Study - West Midlands Authorities (2008)) Although road freight accounts for just 6% of the traffic, delays to its movement account for 30% of the total economic impact (£600m). Road congestion, particularly on the strategic network, is a major issue for Birmingham's residents and businesses.

A further issue is the capacity of the strategic rail network. As those who use the trains during the morning peak will know, many are already crowded when they reach the city centre and demand is

due to increase significantly in the future. Rail patronage in the West Midlands Metropolitan Area has increased by 94% since 2000/1. Network Rail forecasts that the West Coast Main Line (WCML) between Birmingham and London will be over capacity before the middle of the next decade.

However, the increased peak train capacity being proposed for the West Midlands for 2014-19 (2.5% per year) is far less than the background levels of passenger growth being experienced (5% per year) and is also far less than is being proposed for cities such as Leeds and Manchester. There is a serious concern that the lack of rail investment in the West Midlands Travel to Work area in comparison to other regions will:

- Fail to provide the required improvements in rail connectivity for passengers;
- Not connect freight terminals to the expanding electrified rail freight network;
- Provide insufficient capacity for continuing growth in both passenger and rail freight markets;
- Lead to severe overcrowding on the West Midlands rail network and force passengers on to other, less sustainable transport modes; and
- Act as a barrier to future economic growth and job creation.

Whilst there may be some opportunity to increase the length of some trains this is not limitless before major upgrades will be required across the whole network. There is also currently no opportunity to increase the number of trains using Birmingham New Street station. In all, rail capacity serving Birmingham is a major issue which could impede the city's growth.

Road congestion West Midlands



Cost the local economy over
£2bn per year of which
£600m directly to road
freight

B2 – MODAL STRATEGIES AND PRIORITIES FOR ACTION

A New Public Transport Vision for Birmingham

Challenges to Changing the Status Quo

BMAP's approach proposes significant and, hopefully, innovative improvements to the bus-based public transport network in Birmingham. In developing the proposals BMAP has been fully conscious of the current transport regulations and the difficulties of introducing new or replacement bus services which are justifiable on predominantly social need; but which might either have adverse impacts on the existing commercial bus network or will need substantial public subsidy payments.

However, considerable progress has been made in the West Midlands, and no doubt will continue to be made, through the variety of partnership arrangements which have been introduced over the past few years. BMAP's general approach is to build on this partnership experience, rather than impose a wholly additional mass transit network on top of the existing bus network.

Consequently, the approach taken is to build and enhance the current network. In this way the network could largely be delivered through a Statutory Quality Partnership programme (SQP). An SQP is a legal agreement between a transport authority and one or more bus companies, and which involves a negotiation between the authority and the bus company to decide what each party can offer, but with the ability to enforce the terms of the subsequent agreement if either party fails to deliver their part of the agreement.

The local transport authority (or integrated transport authority) can ultimately impose a scheme on an area and take steps to ensure that operators who will not agree to abide by the scheme cannot provide local bus services in the area of the scheme. Current stopping and terminal arrangements in Birmingham City Centre were introduced through the use of an SQP.

It is anticipated that the proposed network will generate sufficient additional revenue to be commercially viable, although this will need to be the subject of further technical feasibility work, and there will need to be firm commitments by all parties to providing transport infrastructure investment.

Some of BMAP's proposed public transport improvements are determined by identified social need, particularly in terms of providing improved accessibility for people in deprived areas, and it is appreciated that these might present challenges in terms of achievability under the current deregulated environment. However, BMAP's intention is to establish a vision of the form that a mass transit system might take, which can be successfully implemented in stages over a longer term period. Given that BMAP's vision stretches out to 20+ years, opportunities such as regulatory changes will arise, enabling the new system to be fully introduced; including elements which might appear problematic at the moment.



The Overarching Public Transport Vision

(Meeting Objectives:    see page 22)

BMAP's public transport vision aims to be innovative, practicable and deliverable. The vision has two principle themes:-

- **A new way of looking at the public transport system in Birmingham.** A multi-modal mass rapid transit network will provide the backbone for transporting people to and from all areas of the city. Although the network will be a mix of: commuter rail, Metro, Sprint and CityLink services (each described below), it will be viewed by users as a single, integrated system. Interchange between services will be easy and commonly done by people travelling across the city. The network will be underpinned by a payment system which uses smart technologies, is simple and transparent, incentivises sustainable transport and ties into a number of other Council and commercial services.
- **Moving towards a zero emissions system.** The technology proposed addresses environmental factors by reducing emissions and encouraging sustainable initiatives.



BMAP's strategy is intended to build upon work already undertaken in the Big City Plan's Vision for Movement and in Centro's 'Towards a World Class Integrated Transport Network' prospectus. However, BMAP goes a further than both of these existing strategies, providing a unique and: 'Birmingham perspective and incorporating advanced technology. In brief, the vision consists of the following ten features:

- A more comprehensive and frequent rail and Metro network, including both development of services on existing rail routes and introduction of new services on the Camp Hill, Tamworth and Sutton Park Lines. These would need to be integrated with the Government's planned new High Speed Two national rail network which would arrive in Birmingham as part of its first phase. The Metro network would include completion of the city centre extension to Centenary Square, to the HS2 city centre station and potentially other routes;
- A series of 11 key rapid transit corridors leading into the city centre; based on the 'Sprint' concept developed by Birmingham City Council and Centro; with some continuing beyond the city centre to provide improved cross-city connectivity.
- The current Inner and Outer Circular bus services to be enhanced in terms of frequency, priority, interchange facilities and to be treated as rapid transit corridors.
- A secondary series of 6 bus-priority corridors, or sections of highway, leading into the city centre. These would be branded differently to 'Sprint', the name 'CityLink' is used in this document, but the branding will be carefully considered. These services would complement the 'Sprint' and 'Metro' networks
- In order for the network to work as a whole, interchange between lines needs to not only be possible, it needs to be simple, easy, fast and reliable. The orbital or circular routes are key to this because they provide cross-city connectivity and link all of the other lines together. BMAP's vision is that interchange between services within the overall network becomes commonplace, facilitating movements to all parts of the city from any starting point.
- Local bus services and less frequent main bus services filling in the gaps where demand is not high enough for a mass transit solution. Many of these services will also benefit from the corridor bus priority measures implemented for the Sprint lines. The whole bus network will be reconfigured to provide better coverage and connectivity, particularly to provide feeder services into the mass transit network.
- The core city centre area (the area covered by the existing bus interchanges) to be a zero emissions zone for public transport vehicles.
- The introduction of a Demand Responsive Transport service using electric vehicles for the central area, within the Ring Road, available to all and which will provide additional connectivity between the quarters, as well as enhancing access to the city centre itself. (Discussed in Part D)
- The whole of Birmingham's transport system (not just public transport, but also future cycle hire, initiatives such as car clubs etc) is underpinned by a simple and flexible payment system which makes use of a number of technology platforms to suit all users.
- An understanding that a public transport journey is not just about the time spent on the vehicle. The experience needs to be improved from doorway to destination. This will include the quality of the walking, or cycling, environment in the areas at either end of the actual vehicle journey. Part C discusses initiatives to improve the environment and safety for pedestrians and cyclists.



BMAP's Mass Transit Vision for Birmingham



Creating a Mass Transit Network

Mass transit can take several forms, depending on physical opportunities and constraints, forecast demand and fundability. A mass transit system could loosely be described as a transit system capable of comfortably carrying more than 4,000 passengers per hour in each direction. Simplistically, the following modes could be considered:

- Heavy Rail - Recognised as a priority in the West Midlands with a group of exemplar schemes proposed as part of a wider package in the West Midlands Rail Vision document.
- Underground Metro - Extremely expensive and unlikely to be a viable business case for Birmingham
- Monorail or Automated Guideway Transit - Grade separated systems, driverless and either single rail or conventional rail – the best known UK system is probably Docklands Light Railway in London, and a monorail is in operation forming the rail-air link at Birmingham Airport. Unlikely to be an acceptable system in Birmingham because of cost and visual intrusion.
- Segregated Light Rail (LRT) - As per the current Midland Metro service.
- Street Tram (also LRT) - As per the Midland Metro section currently being built to New Street and in future extended to Centenary Square, with a potential spur to serve the new HS2 Station and wider aspirations for a more extensive network which would comprise Metro or SPRINT/BRT;
- Bus Rapid Transit (BRT) (wholly or partially segregated) - None currently operational in the West Midlands, but good examples in the UK are in North Kent, Crawley, Cambridge, Fareham/Gosport, Luton/Dunstable, Swansea, Leeds and Bradford. BRT has been defined as “a high profile rapid transit mode which combines the speed, image and permanence of light rail with the cost and flexibility of the bus” (Dr Bob Tebb 2007)

Setting aside cost considerations and feasible business cases for the moment, the essential requirement for mass transit systems is to find the space to provide fast and largely uninterrupted service. In the case of existing rail systems, for example, additional space would take the form of the ability to enlarge stations/car parks, lengthen trains and/or operate trains more intensively and frequently, possibly requiring increased track/platform capacity. In Birmingham, as in most other UK cities, such space is at a premium, with highly developed rail systems operating up to and beyond full capacity. Sometimes it is possible to re-utilise a disused rail line, and this is how the majority of new LRT and BRT schemes have been introduced, including Midland Metro, but these opportunities are difficult to find.

As far as road based schemes are concerned, effective BRT systems require segregation from other traffic and priority at junctions. It is important to recognise that this will almost certainly require reducing road space for general traffic on some roads. This can be controversial, but its justification relies on the premise that, the numbers of those benefitting from the new system greatly outweigh the number of those that might be inconvenienced by it.

To implement a road based system to a certain extent requires courage of conviction that the disruption to general traffic is being done to provide a more equitable use of a scarce commodity (road space) and is therefore the socially responsible thing to do. Many cities across the world have taken this leap and are now reaping the rewards of a transport system which benefits the whole of society. Now is Birmingham's chance to take this leap.



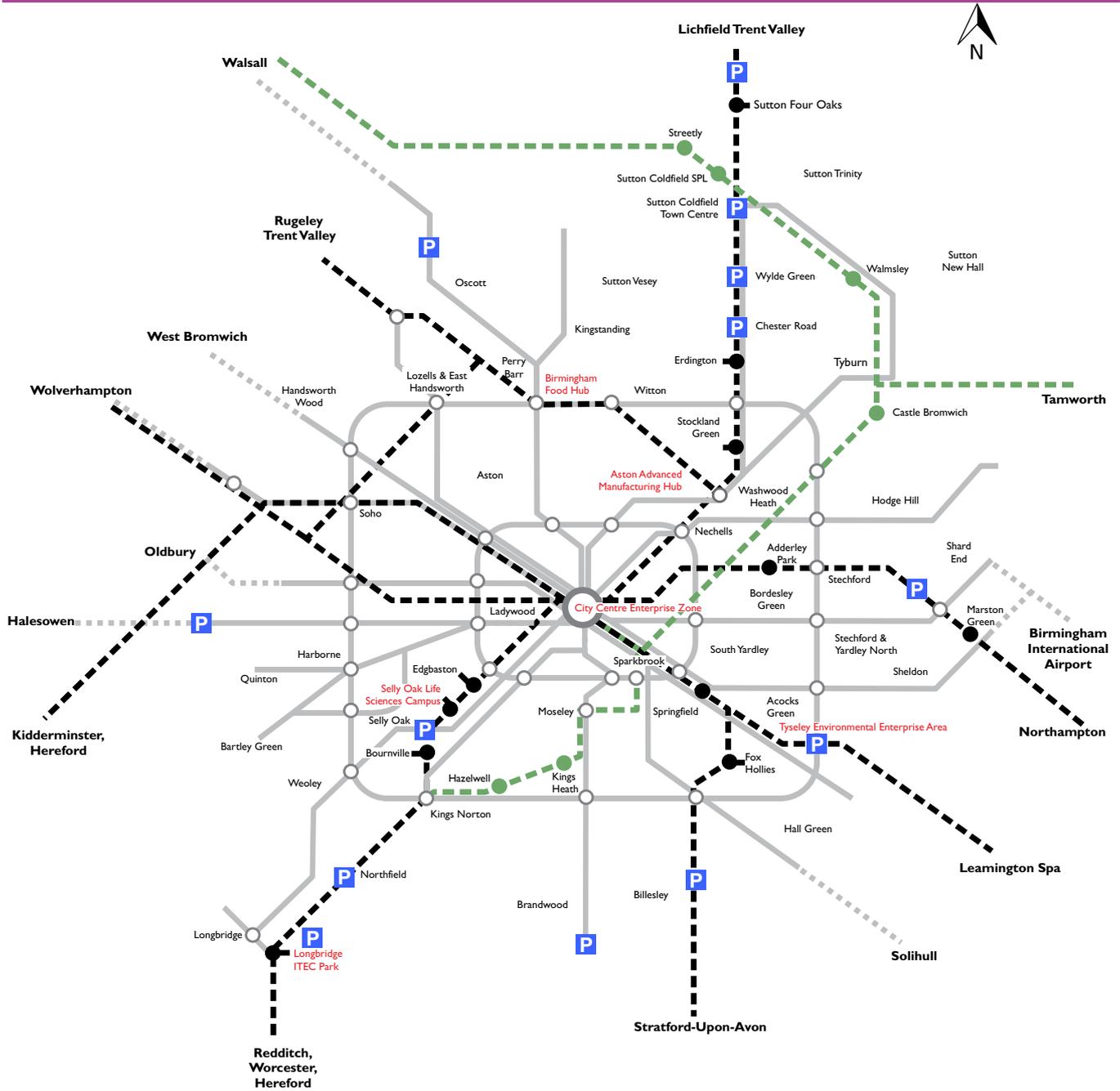
City and Strategic Rail Network

As has been described, the City's rail network is rapidly approaching capacity. Birmingham City Council will work closely with Centro to deliver an improved service in the City. Some key projects will include:

- **Opening of the Camp Hill, Tamworth and Sutton Park lines, facilitated by construction of the Camp Hill Chords connecting lines** for passenger services into Moor Street station, with potential for new stations at Hazlwell, Kings Heath, Moseley, Fort Parkway, Castle Bromwich, Minworth, Walmley, Sutton Coldfield and Streetly. This will not only provide improved access to the city centre for these locations, but is also a key piece of infrastructure which links the wider City together and provides opportunities to interchange into the rest of the mass transit network. More specifically:
 - Camp Hill Line – Network Rail recognises the congested nature of the A435 through Moseley and Kings Heath, and the opportunity for rail to provide some relief to road congestion. ;
 - Tamworth Line – this corridor forms a large proportion of the city's Core Employment areas, and Network Rail recognises there is demand for rail travel at Castle Vale; and
 - Sutton Park - the options contained in the draft Birmingham Development Plan for development in the Green Belt in the vicinity of the Sutton Park Line, which could produce a step change in demand for rail travel in this area.
- **Opening these connections into Birmingham Moor Street** will also allow some long distance passenger services to route away from Birmingham New Street and thus improving service reliability/punctuality for many other services.
- **Realising the wider benefits of HS2.** Improvements in passenger journey times to London are only part of the benefits that HS2 could bring to Birmingham. The new line will release capacity on the existing rail network, enabling the whole rail network into Birmingham to be reviewed, reducing demand on the West Coast Mainline in and out of Birmingham New Street and giving capacity to more frequent local and regional rail services, and freight.
- **The West Midlands Rail Vision** includes a number of 'exemplar schemes' which aim to significantly enhance connectivity and therefore economic output, as follows:
 - Snow Hill Lines Service & Capacity Enhancements (Platform 4 / Rowley Regis Turnback);
 - New Station & Electrification Walsall to Aldridge;
 - New Station & Local Service to Kenilworth;
 - Tamworth/Nuneaton Corridor Capacity & Local Services;
 - WM Freight Spine reopening: Phase 1 Stourbridge-Walsall, Phase 2 Walsall-Lichfield; and
 - Camp Hill Chords Capacity & Local Services (as above).

In general, by undertaking the above and redeveloping stations and rail infrastructure to cope with longer and more frequent trains it is hoped that the suburban rail network can move towards a more 'metro' like service (extremely frequent, no timetable). The key here will be to integrate these with other parts of the overall mass transit network; providing fast and reliable interchanges from one mode to another to facilitate movement across the city.

Rail Network



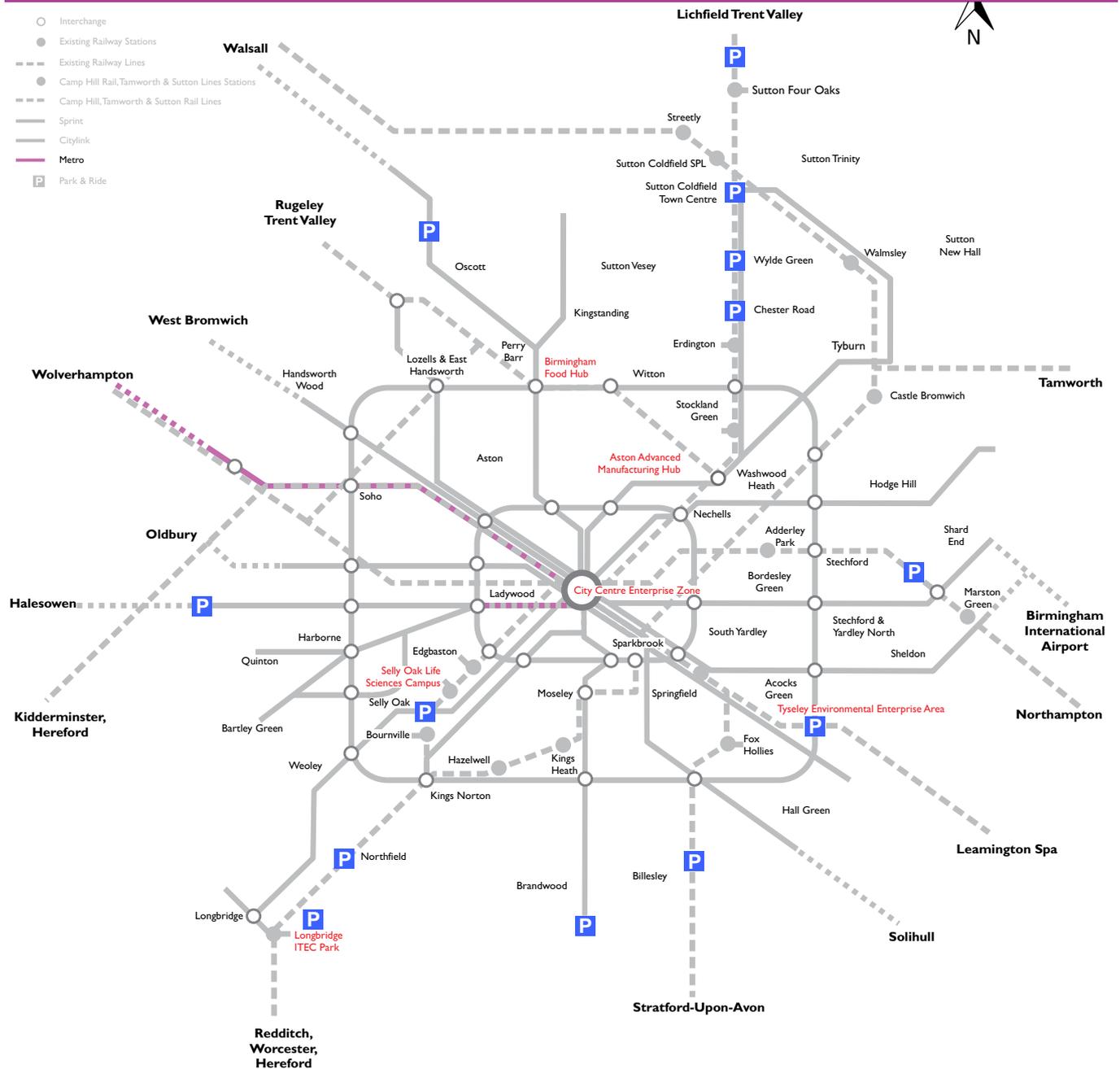
- Interchange
- Existing Railway Stations
- Existing Railway Lines
- Camp Hill Rail, Tamworth & Sutton Lines Stations
- Camp Hill, Tamworth & Sutton Rail Lines
- Sprint
- Citylink
- Metro
- P Park & Ride

Extended Metro

Metro is a very important part of the future network as it will provide links across and within the City Centre. BMAP recommends completing the network as envisioned by Centro’s prospectus. This would be to extend the route from New Street Station, firstly up to Centenary Square and then up to Five Ways; with the possibility of a future further extension to replace a Sprint line along the Hagley Road down to a park and ride site at junction 3 of the M5. The other planned line will be to take a spur from Snow Hill Station over to the HS2 station at Curzon Street; better linking Eastside into the rest of the city centre core.

Centro identifies other routes which have the possibility to become Metro in the future but the nature of the mode for the corridor had not been determined. BMAP’s position is that these routes should, at least initially, be part of a Sprint network. In this way the network as a whole can be developed without having to find the additional funding to build more costly Metro lines. It is anticipated that some Sprint lines will be upgraded to Metro as demand and service requirements change.

Metro Network



Sprint Bus Rapid Transit (BRT) as the Network's Backbone

Given the complexities and costs involved in introducing Metro, BMAP's strategy consists of an ambitious programme of road based BRT corridors (Sprint), based on existing, plus a potential for new, high demand for public transport services. Operating along these corridors, specific Sprint lines would be closely integrated with local bus services and there would be a particular emphasis on interchange between the various modes of public transport.

In order to be successful, Sprint will need the following features:-

1. **High quality** – the vehicles used must be of a modern and striking appearance which brands the service as more than just a bus route, and the quality image needs to be applied comprehensively to the interior of the vehicles and to the whole journey experience including waiting facilities, information and a flexible ticketing system.
2. **An attractive frequency** – Sprint users should not need to use a timetable, as services should be based on a 'turn up and go' philosophy which requires high frequency and high capacity vehicles to create a true mass transit system. Sprint services should operate at least every 7-8 minutes; or more frequently on some corridors.
3. **Reliability and regularity** – these are critically important features, and will be dependent on a comprehensive and integrated approach to the allocation of road space and junction capacity to Sprint.
4. **Safety** – all public transport services aim to achieve a high degree of safety and security. Changes to the highway system need to take safety as a priority, and on-board and waiting security also needs to be addressed in order to ensure users have full confidence in the service.
5. **Accessibility to the system itself and to/from other modes** – easy interchange between public transport services is a key feature of BMAP proposals. To achieve it will require detailed consideration of stop locations with potentially minor re-routing of some existing services to ensure that they make better connections with each other.
6. **Environmentally beneficial** – although the implementation of improved emissions technology through European standards requirements is continuously improving the situation, it is possible to achieve a great deal more through the adoption of advanced technology, which forms an important element of the vision.
7. **Sufficient capacity to meet demand** – matching capacity with demand is obviously very important, BMAP's concept is one of organic system growth, whereby the vehicle capacities and frequencies would be adjusted until the stage is reached where the mass transit technology needs to be changed to accommodate further growth. For example, a bus-based Sprint system might eventually justify investment to be converted into a rail based system. It should, however, be noted that segregated BRT systems are capable of carrying large volumes of passengers, and upgrade decisions would need to be based on vehicle capacity/highway capacity issues, rather than a simplistic assumption that a rail based system is inherently capable of carrying more passengers than a road-based system.
8. **A modern and attractive fares and payment system** – the fare system for Sprint services needs to be fully integrated into the overall public transport network which will need to adopt a 'whole of journey' pricing mechanism; based on a zonal system. It also needs to encourage the use of contactless payment technology. The process of drivers having to deal with fare transactions is a major cause of delay at bus stops. Ultimately, the system should aim to be totally cashless and accessible through a variety of means, including: traditional permits and passes, pre-charged or 'top-up' smart cards, contact payments on cash or credit cards, or linked to smart phone applications.



9. **Economically viable** – funding for public transport major schemes has, over many years, been difficult to obtain, and a number of high profile projects in other areas of the UK have fallen by the wayside due to difficulties in presenting a fully convincing business case. On occasions, this has been because of doubts over projected usage figures. BMAP's approach is to concentrate on a planned roll out of Sprint corridors, with service readjustment to meet rising demand on an incremental basis. Although significant investment will be required for infrastructure development, this approach is designed to minimise the need for public sector revenue support.

BMAP's proposed Sprint network follows a number of key arterial roads which form what are currently the routes of the most frequent bus services. In addition BMAP also proposes that two orbital, or circular, routes are brought into the Sprint network. These routes, which would broadly follow the current number 11 and 8 bus routes (but with some adjustments to enable them to integrate with other services) and provide much needed cross-city connectivity. It is envisioned that users will see these services as ways to cross the network to other lines which then take them to their final destination.

Importantly, BMAP also recommends that a number of Sprint lines traverse the city centre to provide further cross-city connectivity and to provide a number of different destinations to board/alight within the city centre. The current situation, whereby bus services from different quadrants of the city enter the centre and stop at a small number of locations before turning round, is simply focused on getting people into the core. BMAP highlights the need to provide much improved cross-city and internal city centre connectivity by public transport.

The need for these cross-city movements is borne out by the fact that although it is the single largest destination, just 19% of Birmingham resident's commuting trips actually go to the city centre; and currently approximately 40% of people arrive by car when commuting to the city centre, but this figure is almost 70% on average for all other locations in the city. However, commuting is not the only journey purpose under consideration. Developing the BMAP network in this way will vastly increase the accessibility for local residents to access all areas of the city for any purpose; this is discussed in more detail in Part C.

In all BMAP recommends eleven Sprint lines, some of which cut across the city centre:

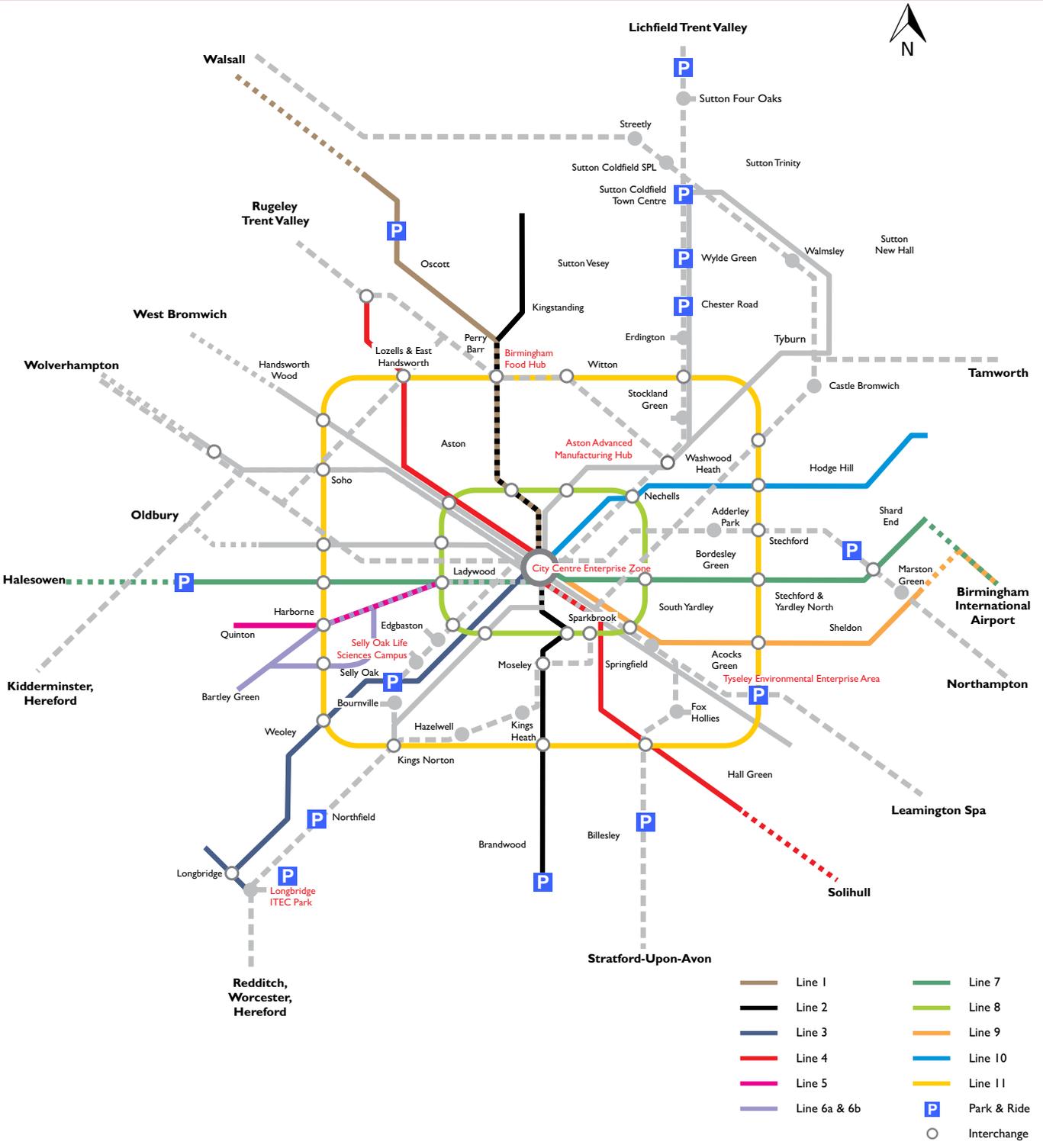
- **Line 1** - Birmingham to Walsall
- **Line 2** – Kingstanding to Druids Heath via Birmingham City Centre*
- **Line 3** – Birmingham to Longbridge
- **Line 4** – Hamsted to Solihull via Birmingham City Centre*
- **Line 5** – Birmingham to Quinton via Harborne
- **Line 6a** – Birmingham to Bartley Green via Harborne
- **Line 6b** – Birmingham to Bartley Green via QE Hospital
- **Line 7** – Halesown to Birmingham Airport via Birmingham City Centre*
- **Line 8** – Inner Circle Route
- **Line 9** – Birmingham to Birmingham Airport via Sheldon
- **Line 10** – Castle Vale to Birmingham Airport via Stechford
- **Line 11** – Outer Circle Route

*Cross-City Routes



It is important to note that these proposed Sprint Lines are conceptual at this stage, and would be subject to detailed technical examination prior to implementation, which may well lead to changes in the routing and cross centre connectivity. For example, it is proposed that Sprint Lines 7 and 10 to the Airport operate a circular route around the city centre (clockwise and anti-clockwise respectively), which is intended to optimise potential inter-connectivity with bus routes coming from other areas of Birmingham and provide an orbital service around the core central area of the city, but this function could be undertaken by other SPRINT services if determined to be more appropriate following further technical work.

Sprint Network



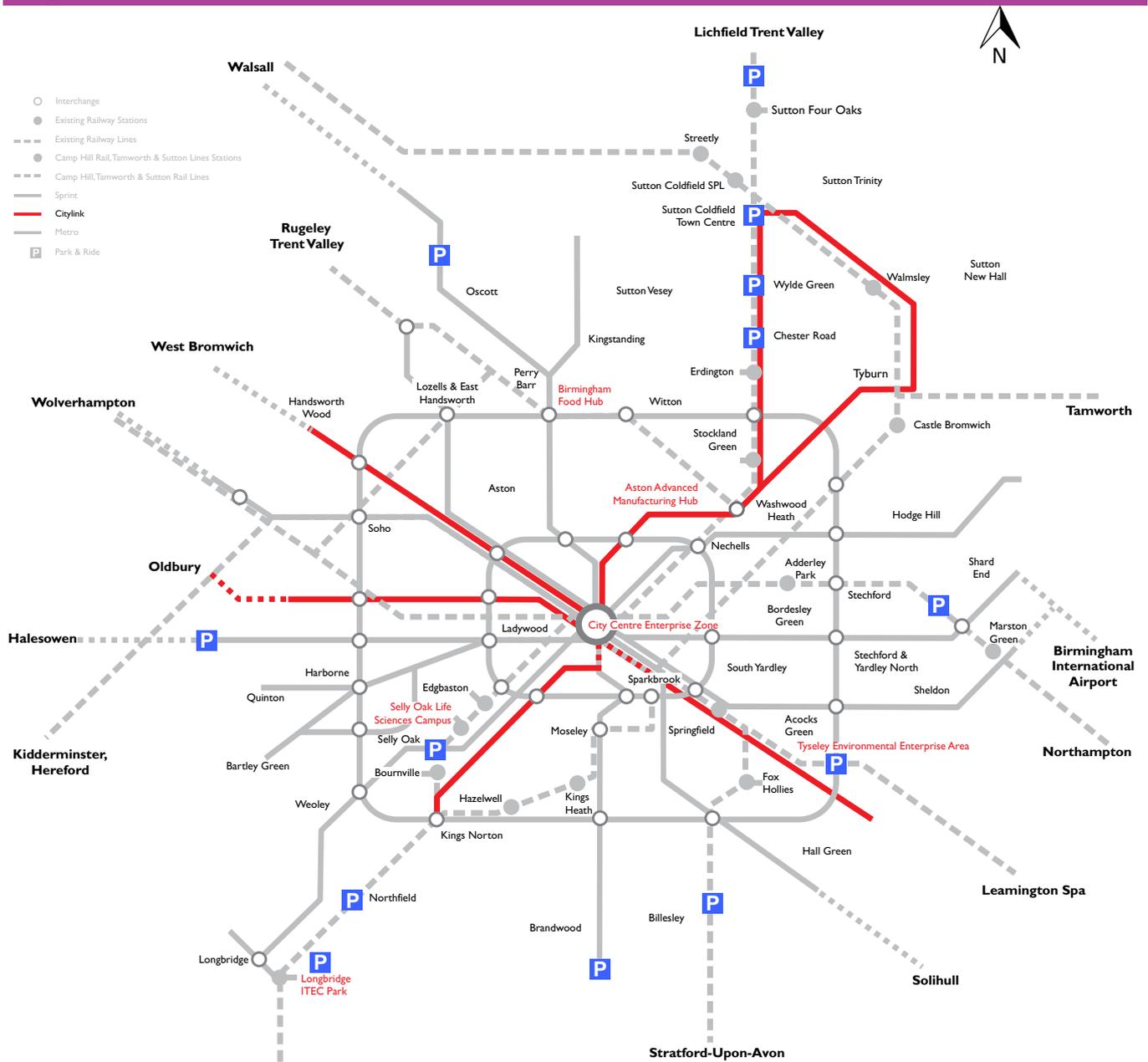
CityLink Services

In addition to the Sprint corridors and circular routes, there are a number of other important corridors in the city which will demand improved service and integration with the rest of the mass transit network. However, these corridors are likely to generate lower demand levels, and hence will necessitate lower frequencies. It is envisioned that these corridors will share many of the same characteristics as Sprint, but with the following exceptions:

- Lower level of on-road priority, but still seeking to speed up services compared to today;
- Lower frequency and shorter distances between stops;
- Likely a different vehicle type but still branded to be part of the mass transit system as a whole – hence ‘CityLink’ (although the exact naming and branding will be determined later).
- Interchanges at crossing points with other arms of the mass-transit network; with co-ordinated timetables, good quality passenger information and integrated ticketing.

CityLink’ services could be upgraded to full Sprint status if forecast usage justifies the additional financial investment required.

CityLink Network



Seek Opportunities for more Park and Ride

Park and ride (P&R) has been a fantastic success for Birmingham and one of the major reasons for the growth in rail travel replacing many car trips to the centre. The challenge will be to find suitable locations to keep up with demand. The network map shows a number of P&R locations, predominantly serving the rail network. The majority of these sites are existing locations, some have been previously identified by Centro and others are put forward by BMAP as ideal locations; although recognising that an assessment of available land needs to be undertaken. In particular BMAP has sought to locate some P&R provision at several of the junctions around the motorway 'box', where mass transit lines can replace car trips into the city; although further investigation is needed to determine suitable sites for Sprint based P&R. Using the network as a whole travellers should be able to access almost anywhere they want across the city, not just the centre. It would be hoped that the public transport offer could provide a faster, more comfortable and more reliable journey than travelling by car.

In addition to relatively large P&R sites, mostly on the periphery of the city, BMAP's strategy will be to also find smaller locations across the network which can provide some P&R capacity to service either Sprint or CityLink. There are already

obvious locations around the city where people are informally parking around residential areas in order to travel the last part of their journey by bus into the city centre, either because the bus is a faster option from that point or to save money on car parking in the centre. BMAP will seek ways to formalise these activities wherever possible to relieve parking issues in residential areas; with the anticipation that the new mass transit network will attract even more users.

The Importance of Interchange

The intention of the network described above is that it is viewed as a single, integrated system. As such someone can look at the network map and easily plot how to make their journey across the city; which may require them to interchange from one line to another to get to their destination. If the vision is to be a success then these interchanges are incredibly important.

In order for a public transport user to be encouraged to interchange the experience must be as simple, efficient and reliable as possible. This will require the following principles to be applied:

- Co-ordinated timetables which minimises wait times – particularly between less frequent services.
- High quality waiting facilities.
- Vehicle arrival information – with the use of technology this could be displayed on a digital map, showing the current location of the inbound vehicle.
- 'Whole of journey' pricing (described overleaf).

The Future of Transit Interchanges/Stops as Envisioned by Massachusetts Institute of Technology (MIT)



A New Way to Pay

Many people will be familiar with the Oyster Card system in London; where the user has a smart card which they can use across the majority of the public transport network (Tube, bus and some commuter rail). There are many examples of this type of system across the world; indeed Centro has recently launched a similar system which can be used on some of Birmingham’s buses (the Swift card).

These cards can be used in a number of ways; either as a top-up or pay as you go system where the user puts an amount of money on the card and draws down on it for individual journeys. The system is smart enough to know when a user has changed to a different mode to complete a single journey and only charges for the single amount, or puts a cap on the amount charged in a single day to be that of the equivalent ‘day pass’ value. These cards can also be used to hold season passes of various length, daily, weekly, monthly or annual; where users can navigate the entire system as much as they like on their pass without extra charge.

Unfortunately the payment system for Birmingham’s public transport is not so straightforward. There are a variety of different passes which can be bought, some cashless technology is used but not across all services and for the majority of buses in the city a user cannot even get change. Whilst Centro is striving for a universal smart-card payment system, through the Swift card, to a certain extent this is now old technology.

There are already a number of other cashless payment systems around, such as the technology used for contactless payment on credit or debit cards; or similar technology now being built into some smart phones which allow them to be used for making payments.

BMAP’s vision is for a new way to pay for and use not just public transport but other city services as well. This would not just be limited to having a particular card; the system will also be able to be accessed from a user’s own credit/debit card or smart phone. All that would be required would be for a user to set up an account and then choose which payment method to use.

BMAP’s vision for the Birmingham ‘Go Anywhere’ system includes:

- For use across all public transport, not just in Birmingham but across the region and potentially beyond. On some of the case studies examined as part of the development of BMAP a number of places have systems which can be used in other cities and regions across the country.
- A zonal charging system is introduced and users pay for the trip they make through the zones.
- A variety of means are available for people to pay: including a bespoke pass, through contactless credit or debit cards, smart phones etc.
- The pass or user account is not exclusive to public transport. It can be used on other mobility services: registered taxis, future cycle hire scheme, car parking, car sharing initiatives etc.
- Top-ups or pre-payment can be made in a variety of places: at stops/stations, on line or in some local shops.
- Using sustainable transport is incentivised because the pass can also be used to pay for other city services, such as leisure centres. In order to promote improved health and sustainable transport, users could be given credit towards a Council-run leisure activity every time they choose a sustainable mode.
- Essentially this pass becomes a way for Birmingham residents to not just travel but to also live in their city.

The City Council will work with stakeholders such as Centro, transport operators and technology providers to realise a system such as that described above. A payment system of this type is essential to the overall vision of an integrated transport system that users view and use as a whole.



An Emissions Free Network

(Meeting Objectives: ♻️ ❤️ see page 22)

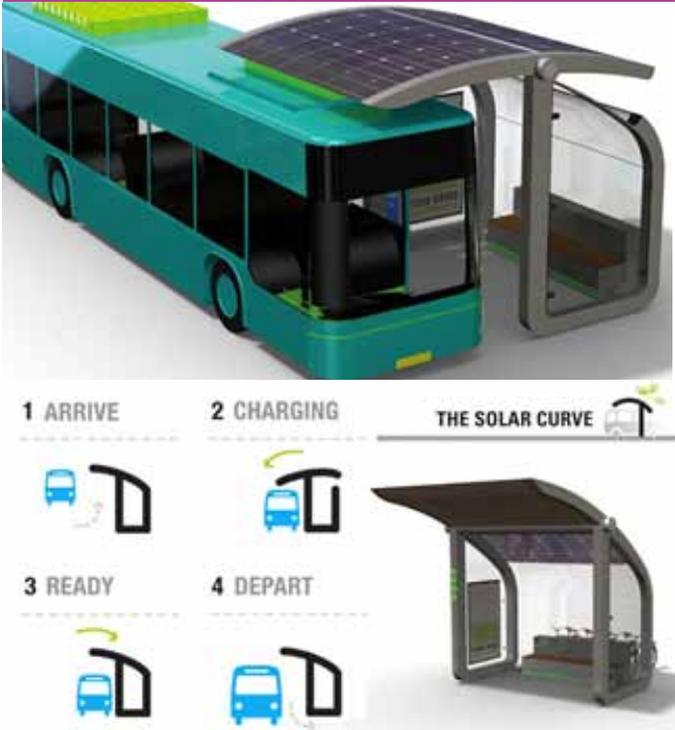
A fundamental requirement for BMAP was that the strategies within it contribute to the Carbon Road Map targets; which state that Birmingham will reduce its carbon output by 60% by 2027 (from a base at 1990). To help achieve this, BMAP proposes that the whole of the mass transit network described above will be emission free at the point of delivery. All vehicles in this system will run on electric power. Achieving this aim would significantly enhance the environment and raise the quality of service provision.

After considering a number of different options it was felt that the best solution for Birmingham could be battery powered buses using induction technology. This is an innovative and potentially exciting way using battery powered, electric buses; which gets around the issue of having to regularly recharge batteries.

Whilst electric-hybrid buses have successfully been put into effective mass production, attention is now being given to new techniques designed to tackle battery life, which remains a severe constraint on electric public transport vehicles; as they normally need to interrupt their routes to recharge. However, new solutions are already being developed and used where the vehicle can charge its batteries as part of its regular route.

As just one example of this new technology, the proposed ATC Solar Curve Bus Stop concept shown opposite has been developed by Studio Mango for the city of Noord-Brabant, in the Netherlands. The system uses contactless charging technology at existing transit stops, enabling electric vehicles to recharge each time they stop to pick up passengers.

Concept for a Solar Powered Inductive Shelter/Vehicle Charge – developed by Studio Mango www.studiomango.nl



The curved roof would both protect passengers from the elements and tilt down to enable wireless energy transfer to vehicles as they pulled up under the overhang. This energy transfer would occur using inductive charging, which employs an electromagnetic field to transfer energy between two objects.

Proterra Inductive Charging www.proterra.com



A similar concept is also proposed for the UK, where plans have been unveiled for the country's first wirelessly charged, all-electric bus route using vehicles that can match the capabilities of diesel models.

A five-year agreement to run a trial route in Milton Keynes has recently been signed. The trial will involve installing wireless charging at technology three points along an existing bus route. These will allow the new electric vehicles to recharge quickly during the timetabled 10-minute driver changeover time.

The trial scheme will remove around 500 tonnes of vehicle CO2 emissions a year, as well as 45 tonnes of other noxious emissions. The route currently transports more than 775,000 passengers a year over a total of 450,000 miles.

passes over that charging plate, the two magnets become "tuned" and current flows to charge the on-board battery. The charge plates under the road need only take up only between 5 and 15 percent of the total route, meaning it is relatively inexpensive to install across a large network.

There are a number of systems on trial across the world in places such as Genoa and Turin in Italy, Gumi in South Korea and Manheim in Germany.

Although various technologies can be considered BMAP believes that some form of wireless induction charging and the use of electric vehicles would be a highly innovative target for future Sprint and CityLink services in Birmingham. It is a zero emissions at point of use technology, and the most likely foreseeable solution to making battery powered electric buses a practical proposition.

Although there are many examples of this technology already in operation across the world, most are still in their trial stages. It would be prudent in the short to medium term to await the detailed outputs of these technology trials before committing to an entire network. However, it may be possible for Birmingham to be at the forefront of this technology and establish a trial of its own. In the meantime BMAP recommends that Sprint and CityLink services should be operated initially using low emission technology, such as hybrid diesel-electric power or CNG fuel; with a view to moving to inductive battery powered vehicles at the earliest practical point.

Conductix-Wampfler buses have been in operation in Genoa and Turin for 10 years



The system which was of most interest for potential application in Birmingham is one which uses the same technology used to charge phones and toothbrushes wirelessly, but used on a much larger scale. This form of induction relies on magnetic charge plates beneath roadways and a counterpart inside the vehicle. When vehicle



Delivery and Operation of the Network

To deliver the network BMAP recommends 'converting' one or more of the most frequent current bus service in each corridor to create either a Sprint or CityLink Line; with the remaining services being retained and readjusted to create good interchange and fill any gaps. This should be considered as an organic approach to the introduction and expansion of mass transit, rather than imposing new Sprint services on top of the existing service network, without due regard to their impact on routeings and ridership. It will require a high degree of partnership working with commercial bus operators, but potentially offers a 'win-win' opportunity for operators, authorities and, most importantly, passengers.

Under the current de-regulated system it can be very difficult for transport authorities to control the routes and frequencies of commercial bus services, together with important elements of service quality. In part this is because under a market driven system, such as deregulation, operators do not see profit to be made by running particular routes, frequencies or vehicle types. However, the system proposed by BMAP is based on the principles of social need, rather than purely market driven, and hence some elements of it will need to be subsidised (as many bus services already are) in order for it to operate as envisioned. It must be recognised that this network will come at a cost and the city council, Centro, operators and the private sector will need to come together to find ways to pay for it. Some proposals for which are contained in this document.

BMAP envisages the whole mass transit network and other supporting bus services being subject to a Statutory Quality Partnership Scheme (SQPS). This is an arrangement by the Local Transport Authority (LTA – which is Centro in the West Midlands) which commits all parties to a pre-determined series of quality standards covering the vehicles used, frequencies and maximum fares and the provision of the essential highway infrastructure and other off-bus facilities. This builds upon the experience gained from the Birmingham City Centre SQPS introduced in 2012 to regulate bus and highway facilities.

Operating the system in this way should be attractive in principle to bus operators. However, as an alternative it could be possible to adopt what are termed 'Quality Contracts'. Under this arrangement the service network and timetables are determined by the transport authority and the operation secured through competitive tendering strictly to these conditions.

In considering the introduction of Sprint corridors, the overall design needs to take account of the future potential to convert some, but certainly not all, Sprint Lines to Metro (or something similar), should passenger traffic grow to the extent that significant additional investment is justifiable.



How can public transport priority be provided on Birmingham’s roads?

(Meeting Objectives:   see page 22)

In order to meet the objectives of the BMAP and achieve the vision for the mass transit network, changes will need to be made to many of the major roads across Birmingham. These changes will be necessary to ensure that sustainable transport options are promoted and a more equitable transport system is developed which seeks to move people, rather than cars. As has been described in Part A; one of the lessons learned from looking at best practice from Europe and the rest of the world is that highway capacity needs to be seen as a scarce commodity. Its use needs to be appropriately balanced across a number of different users to the benefit of the majority. This inevitably means that in order to achieve the aims of BMAP, some road capacity will need to be shifted from cars to public transport, to such an extent that the public transport option is as quick, if not quicker, than driving.

In order to demonstrate how Birmingham’s roads could evolve, a series of concepts have been developed; based upon three typical road types seen across the city. It must be stressed that when considering how to develop *Sprint* or *CityLink* in a specific corridor, or circular route, each road will be treated on its own merits.

The intention of the concepts outlined below is to present ideas of how space across some Birmingham roads could be reallocated to provide the level of public transport priority needed to achieve the principles of BMAP. The view of BMAP is that in order to achieve a more equitable transport system in Birmingham then some tough decisions on providing much more space and priority on some roads will need to be taken.

The concepts presented below are illustrative only. There are many different ways to achieve the required level of public transport priority along a corridor and each location will be treated in accordance with its specific physical constraints (e.g. impacts on mature trees, parking implications, requirements for pedestrians and cyclists etc). To a certain extent the concepts presented in this document are intended to be challenging and thought provoking. The intention is to raise the debate on how road space should be allocated in Birmingham, not to say that all roads will be treated in the same way nor that these are necessarily perfect answers to a particular location.

Three typical Birmingham road cross sections have been examined:

- Urban dual carriageways
- Constrained arterial roads
- Lower priority corridors



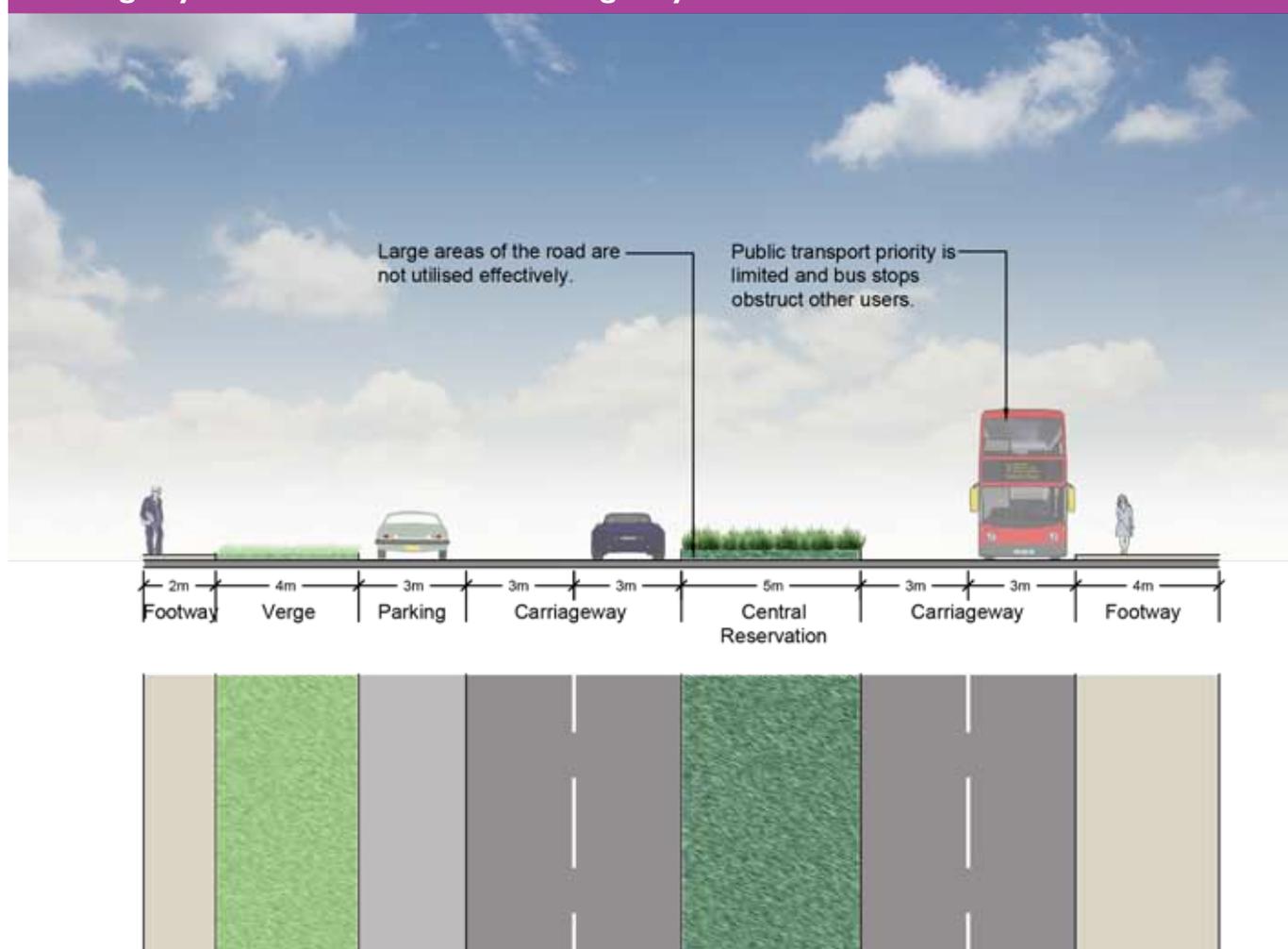
Urban Dual Carriageway Corridors

These dual carriageway corridors currently carry the highest traffic flow levels in the city. They primarily cater for the car with some bus lanes being provided when land is available. A high proportion of the junctions treat all vehicles the same in terms of priority, and thus the bus services are hampered by congestion caused by private motor vehicles.

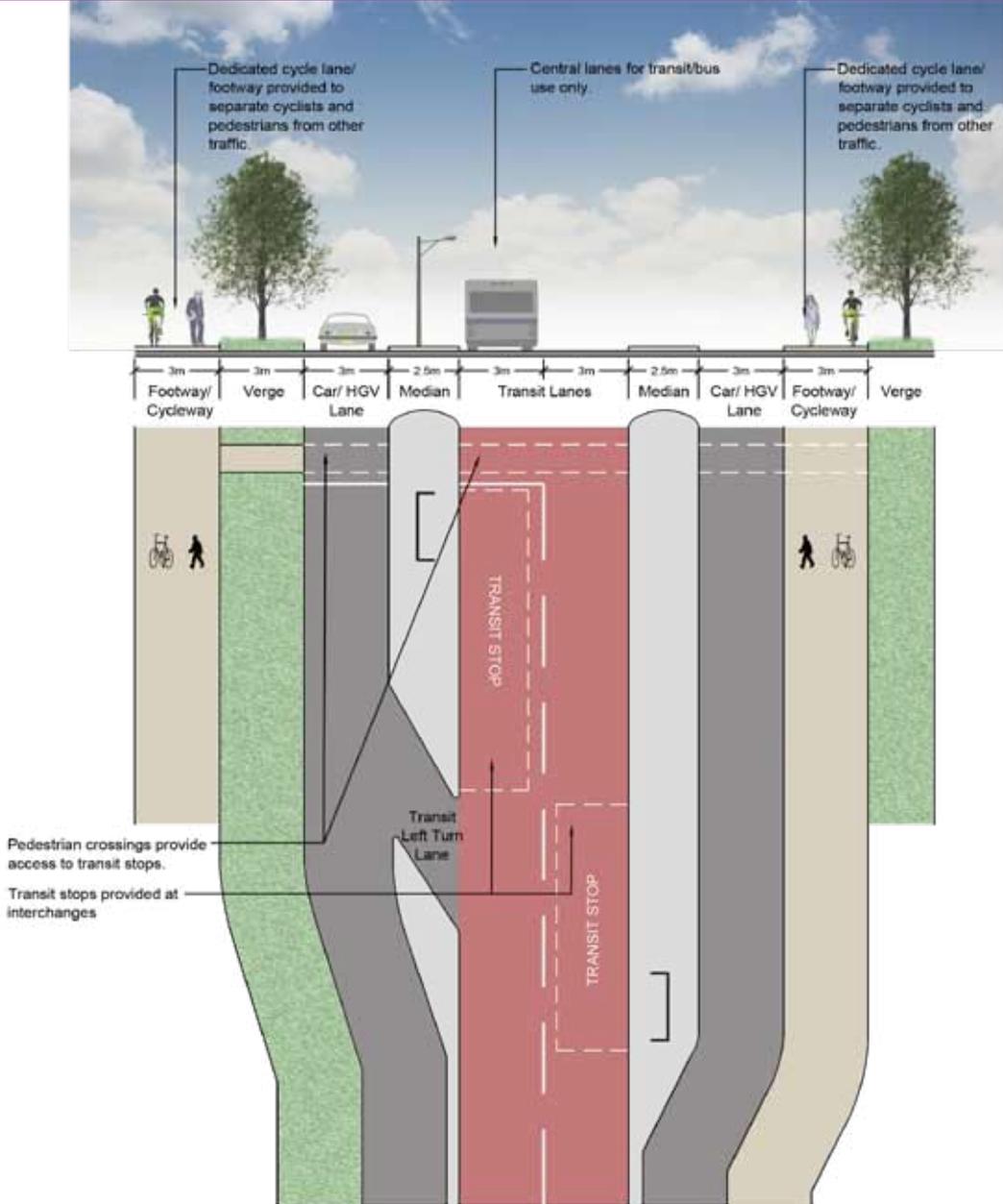
Once solution could be to change the priority to enable Sprint to operate in an environment not constrained by cars at all, thus providing opportunity for quicker services with greater reliability. As a consequence capacity for other vehicles will be reduced. However, the objective of the proposed mass transit network will be to shift people from the car to more sustainable transport options and so overall more people will benefit than not. Given that these corridors are dual carriageways they have the available width to provide greatest 'mode priority' change. The following provides a summary of this corridor:

- High priority corridor for use by Sprint and other services within the city. Priority is given along the length of the corridor and in particular at junctions using vehicle detection technology to change traffic signal sequences.
- Accommodates a large number of different public transport services operating at very high frequency.
- Provision for cyclists needs to consider the high vehicle flow on these routes and potential high speeds of vehicles; the preference would be to find space for cycling outside of the main carriageway.
- Capacity for private motor vehicles has halved along the main carriageway. Side roads are also managed by limiting access in order to keep traffic flowing on the main road.

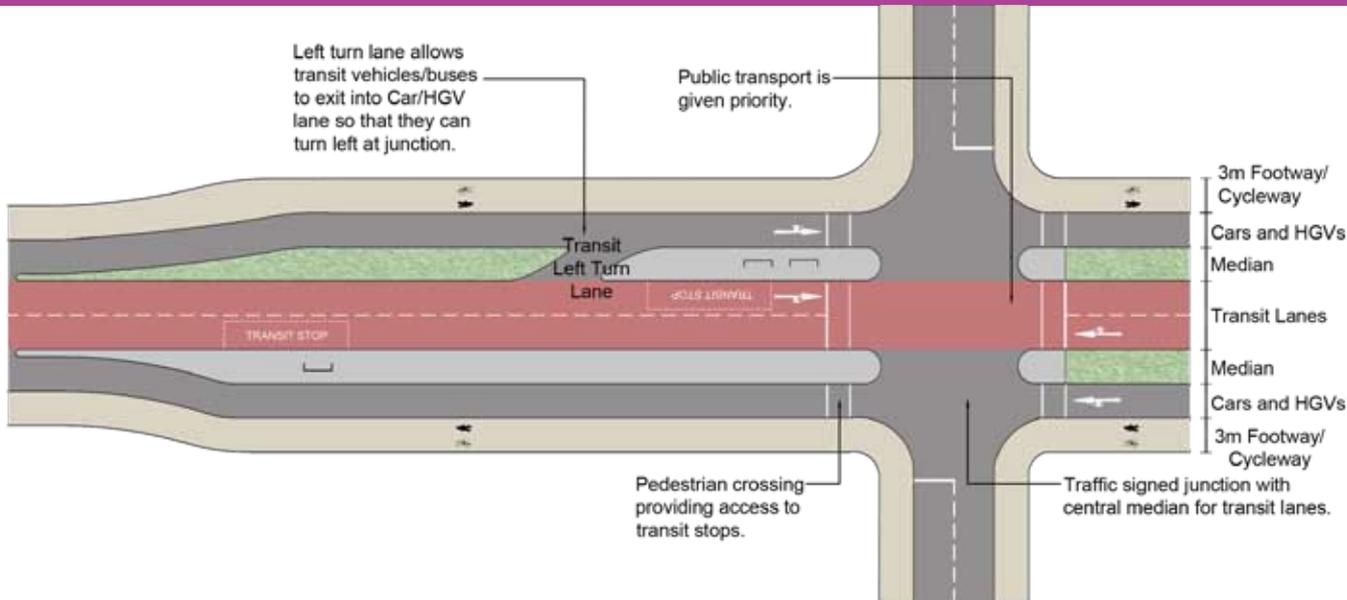
Existing Layout for a 'Urban Dual Carriageway'



Concept for High Priority Transit Route



Concept for High Priority Transit Route



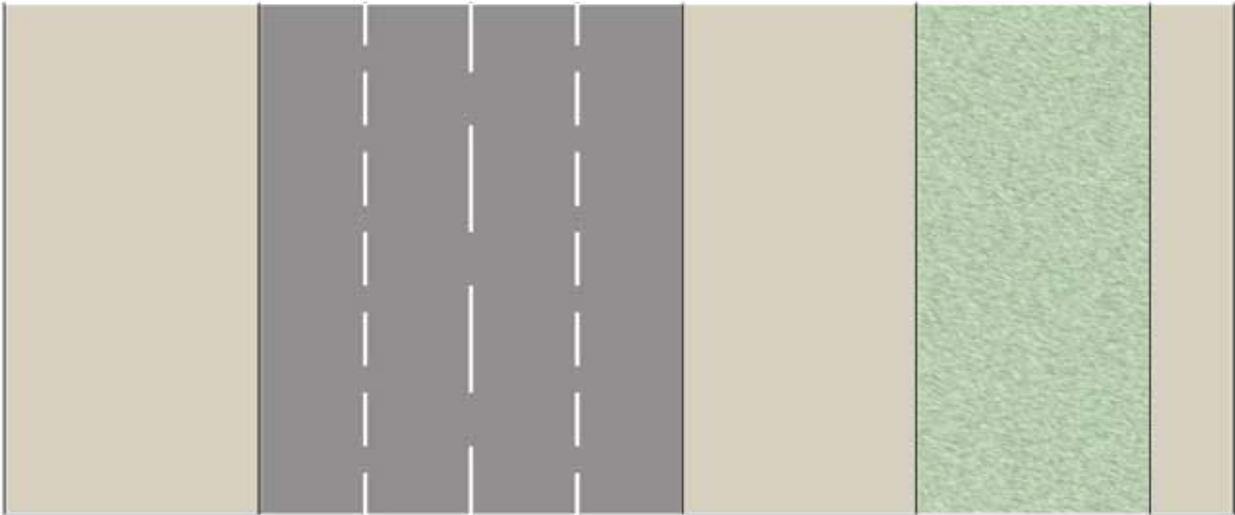
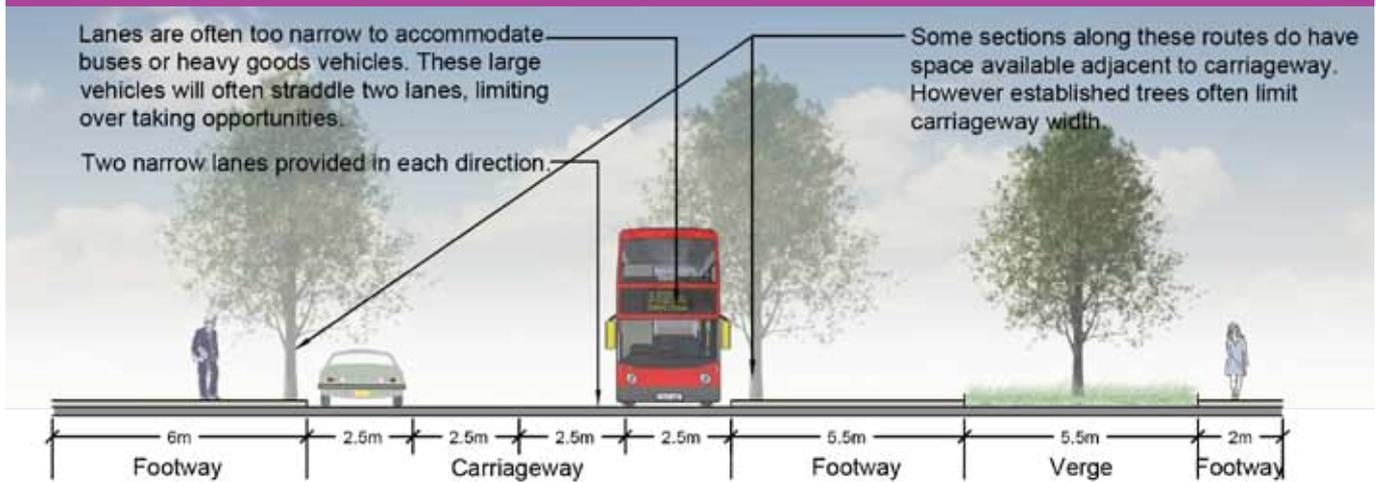
Constrained Cross-Section Mass Transit Corridor

These single lane carriageway corridors currently accommodate four narrow traffic lanes, often used by all modes of transport. These corridors experience high flows of vehicles entering the city centre during the AM peak period and high flows of vehicles leaving the city centre during the PM peak period. The existing lanes on these corridors are often only 2.5m wide and therefore do not adequately accommodate large public transport or heavy goods vehicles.

One potential solution to this could be to have a tidal flow operation which switches round depending on the direction of the peak traffic flow; but the near-side lane operates as 'public transport only' in the peak direction. Similar examples operate in other cities across the UK, including the A61 in Sheffield and the A470 North Road in Cardiff .As with the dual carriageway option, priority to public transport will also be given at junctions via the application of technology to change traffic signals. Traffic flow, for the benefit of all corridor users, can also be managed by limiting access in and out of side roads off the main carriageway; consolidating cross movements at major junctions.

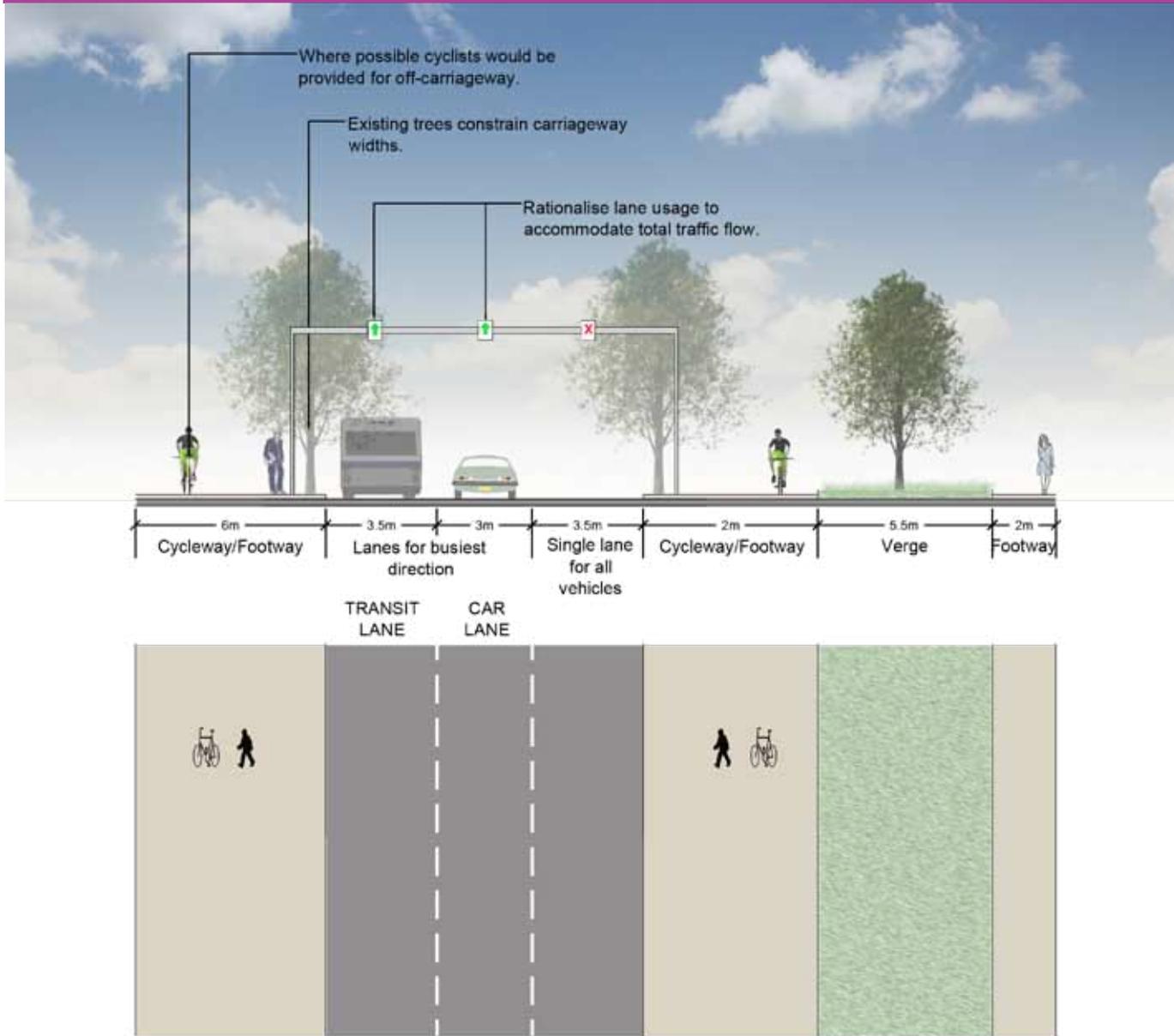
Another potential solution here could be to utilise the three lanes to have bus lanes in locations where queues form in either the morning or evening peaks. These would switch from one side of the road to the other; something similar to this currently operates on the Alcester Road in Birmingham.

Existing Layout of a Constrained Four Lane Road



General Comment: These roads provide important routes to/from the City Centre and can therefore experience tidal traffic flows.

Concept for 'Peak-Flow' Operation and Transit Priority



Lower Priority Corridors

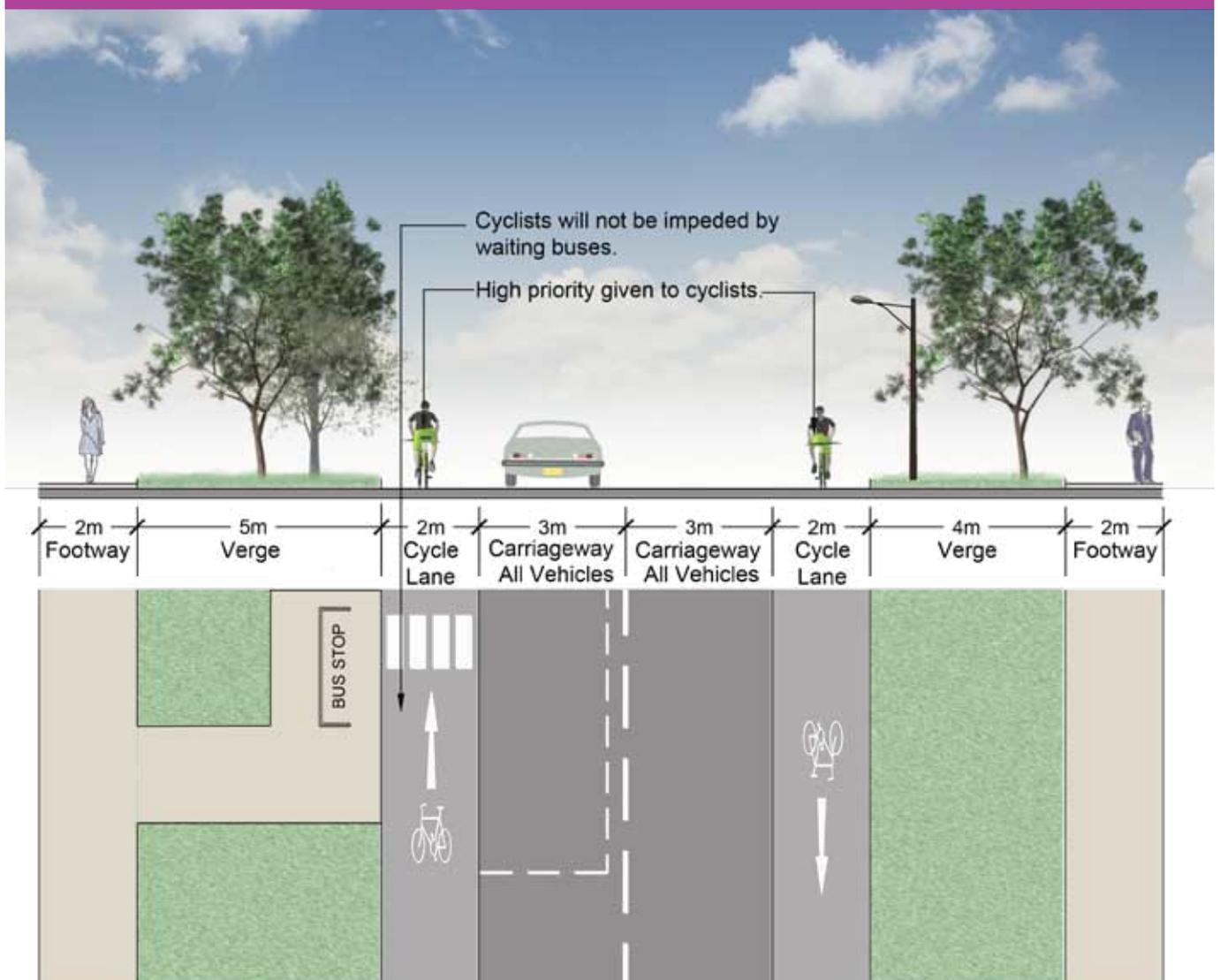
These corridors are likely to be those which contain the CityLink services, which have lower frequency, shorter distances between stops and lower priority levels than Sprint corridors. These corridors are currently used by all modes of transport and provide access to residential roads and also in parts have direct residential frontage.

Whilst these corridors are important, they are not typically subject to a high frequency of public transport services, when compared to Sprint. Therefore, it is not appropriate to promote fundamental changes to the carriageway layouts as the costs are unlikely to outweigh the benefits. However, public transport priority can be provided at junctions through the use of vehicle detection and short sections of bus lanes at traffic lights.

They are secondary roads in the city’s hierarchy and often run parallel or near to the primary arterial routes; making them good options for cycle routes.

An option has been presented which formalises the road space allocation to include cycle lane facilities whilst still providing sufficient road widths for public transport, HGVs and cars. These concepts will need to be developed further in areas where car parking is required, say in front of short sections of shops or other businesses, where options may include reducing verge widths.

Concept for Providing Space for Cyclists on Lower Order Roads



Birmingham's Cycle Revolution - establishing cycling as a mass-participation mode of transport

(Meeting Objectives: 🏠 🚲 ❤️ see page 22)

There is some cross-over here with initiatives which may come forward BMAP's other two themes: (covered in Parts C and D of this document) as cycling is an excellent mode of transport for cross-city journeys, short distance/local trips and getting to/around the city centre. However, the vision for cycling as a whole is covered below.

Birmingham shares the Government's agenda for a transformational change in the level of cycling over the next ten years. Policies and strategies such as BMAP and the Cycle Revolution (City Cycle Ambition Grant bid document) demonstrate this commitment to promote cycling and walking. The city was recently successful in winning £17m of funding from the Department for Transport to launch our vision for cycling in the city. However, this only supports the first two years of a transformational long-term cycling strategy.

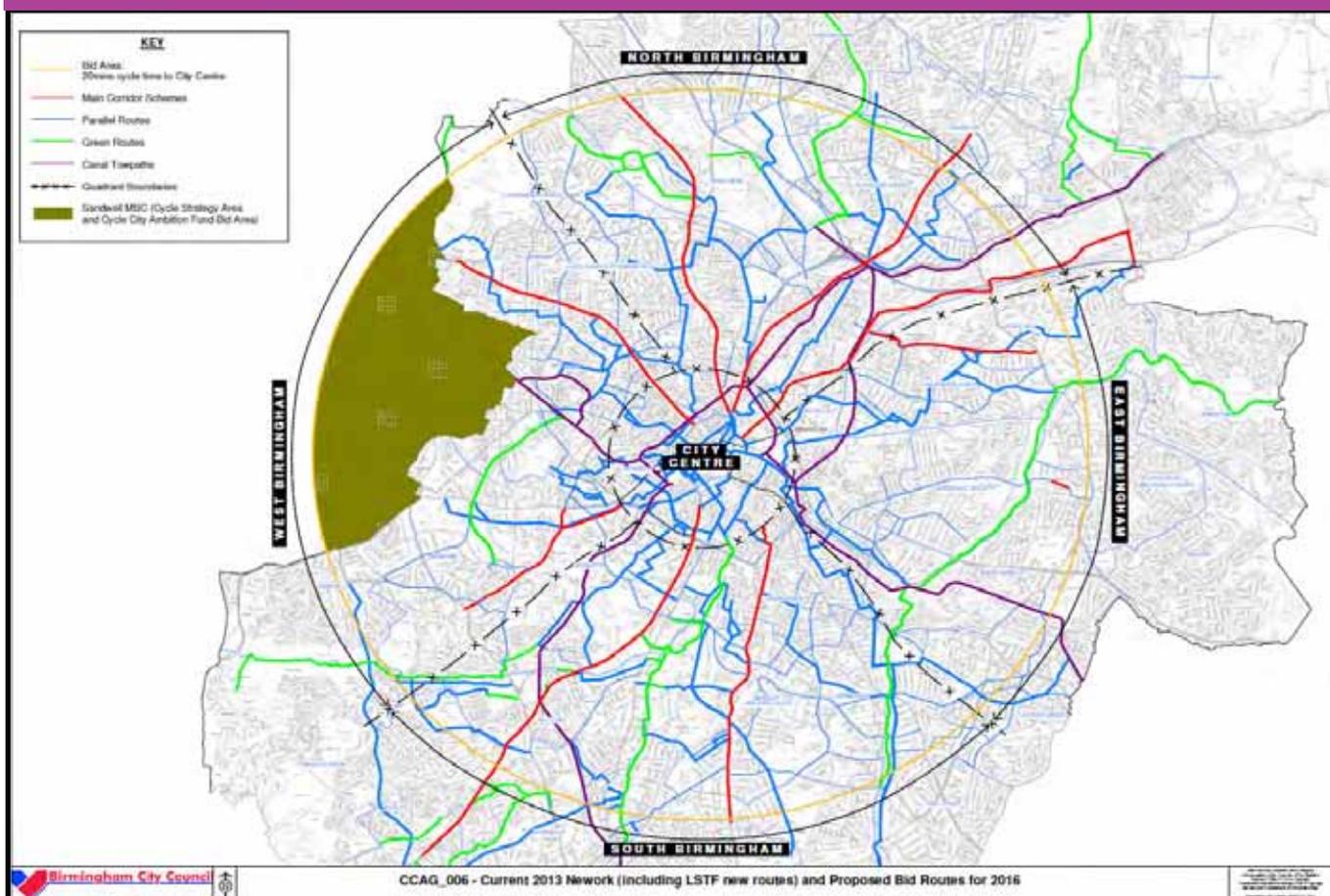
The initial funding will facilitate the development and implementation of infrastructure to comprehensively improve conditions for cycling and provide a catalyst to deliver our ultimate aspirations, making cycling an integral part of our transport network with cycling part of everyday life and mass participation a reality.

The initial investment will focus on delivering a cycling network infrastructure and supporting infrastructure within a 20 minute cycling time from the city centre; regarded as an attractive cycle distance to encourage modal shift. The investment will provide a cycle network and associated facilities designed to improve people's access to workplaces, schools and other key hubs. Its aims will be to improve mobility, health and well-being, and better connect people to public transport.

The package includes:

- Junction improvements, better street design and segregated or partially segregated cycle infrastructure alongside arterial roads for commuters;
- Segregated infrastructure to enable higher rates of access to schools;

Vision for 2016 Birmingham Cycle Network



- Better infrastructure to link up businesses, hospitals, shops, and key services people need to get to as well as links between green space and roll out of more 20 mph zones and limits (subject to consultation);
- Improved interchange hubs and parking with better facilities to enable and encourage better door to door journeys; and

The measures proposed will significantly improve the conditions and scope for cycling across the city leading to modal shift. The initial package was carefully selected to ensure the initiatives align to aspirations and objectives for the longer term strategy, but are also deliverable in the funding period. Our long-term plan will build on this to develop a comprehensive network of routes covering the entire 20 minute catchment area by 2023 and then the remainder of the city by 2033.

Our vision for Birmingham in 2033 is a city where cycling is a mainstream mode of transport, integral to a low carbon, sustainable transport system underpinning an economically thriving city. From 2023 through to 2033 we expect to see the effects of a positive feedback loop whereby more people cycling makes it more acceptable to give over road space to cycling in a more radical way as seen in Denmark, the Netherlands and other leading European countries and now increasingly in London. As high-traffic shared spaces become more commonplace, such measures become acceptable to cyclists and other members of the public alike and can be used to tackle further problem sites and district centres.

The strategy will be to increase the geographical coverage of the cycling network across the entire city and open further connections with neighbouring authorities to ensure continuous provision for cyclists. We will also implement more radical provision for cyclists and refresh infrastructure measures to continuously improve quality.

By 2033 we predict a further increase in the number of people cycling on a regular basis as well as an increase in the length of cycle trips as residents become more accustomed to the mode. Improved health will result in a reduction in healthcare costs and benefits to business will continue to increase through reduced sickness and increased productivity.

The overall cohesiveness and identity of the city will grow as more people are empowered to move around it quickly and cheaply, whilst exploring and getting to know the city's neighbourhoods. This reduction in severance between communities will be complemented and sustained as residents of all social and ethnic backgrounds are encouraged to take up cycling.

The Birmingham Cycle Revolution will create a European cycling city that is attractive and enticing to all who travel within the city. Cycling will be a vital mode of transport for the city's residents, part of everyday life and integral to the city's modern, holistic and sustainable transport system. Both businesses and tourism will increase as the city's reputation for good quality connections, green infrastructure and support for sustainable travel grow during the Birmingham Cycle Revolution.



SUSTAINABLE TRANSPORT STRATEGIES FOR ECONOMIC ZONES

(Meeting Objectives:    see page 22)

The City has plans to focus job creation on six 'Economic Zones'.



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There is an opportunity to target these locations from an early stage and make them examples of what is achievable. BMAP intends that these locations become 'Green Travel Zones' within Birmingham, which have their own distinct targets for public and active transport use. Currently, for areas outside of the city centre, almost 70% of Birmingham residents travel to work by car. BMAP intends to set targets for these zones (except for the City Centre Enterprise Zone, which is discussed separately in Part D and will have much higher targets) that car use will represent 50% or less.

To achieve this the council will have to work in partnership with developers and business tenants in these areas to impress the importance of the initiatives and what each party must do to achieve them.

These would need to be formal partnerships where the council commits to provide the necessary infrastructure and the businesses on-site committing to aspects such as: tighter parking controls, implementing electric vehicle charging points, providing facilities for cyclists and changes to freight and logistics operations.

By investing in infrastructure in the Economic Zones at this very early point in their development it is hoped that BMAP, through a comprehensive package of measures, can have a positive impact on the trip making patterns at these locations. Birmingham City Council will use these zones as test cases as to how to influence travel behaviour in specific areas. By monitoring progress against targets and evaluating the impacts of various initiatives the city will look to roll out similar programmes at other major trip generating areas.

The anticipated benefits of these initiatives will be a contribution to the overall objectives for BMAP in terms of Efficiency, Equity and Health. However, by reducing car use in road network around these areas there will be knock-on benefits for business travel and freight movements; making these areas even more attractive to investors.

Mode	2011 Typical Commuting Mode Share for Areas Outside of the City Centre	BMAP Targets for Economic Zone Areas
Car	68%	50%
Public Transport	19%	30%
Walking	9%	15%
Cycling	2%	5%

The exact makeup of the package of measures aimed at each location will be determined from detailed studies into each. However, it is anticipated that initiatives could include:

High Quality Public Transport and City-Wide Accessibility

The proposed BMAP mass transit network shows that each Economic Zone lies on at least one of the lines. This means that once the full network is realised these locations can be accessed from any other point in the network. This would be preferably within one interchange but no more than two from any point on the network; thus increasing the accessibility of these areas by large proportions of the city's population.

Detailed studies will be undertaken as to how the mass transit network can penetrate each area in order to further increase accessibility for the workforce and business travel.

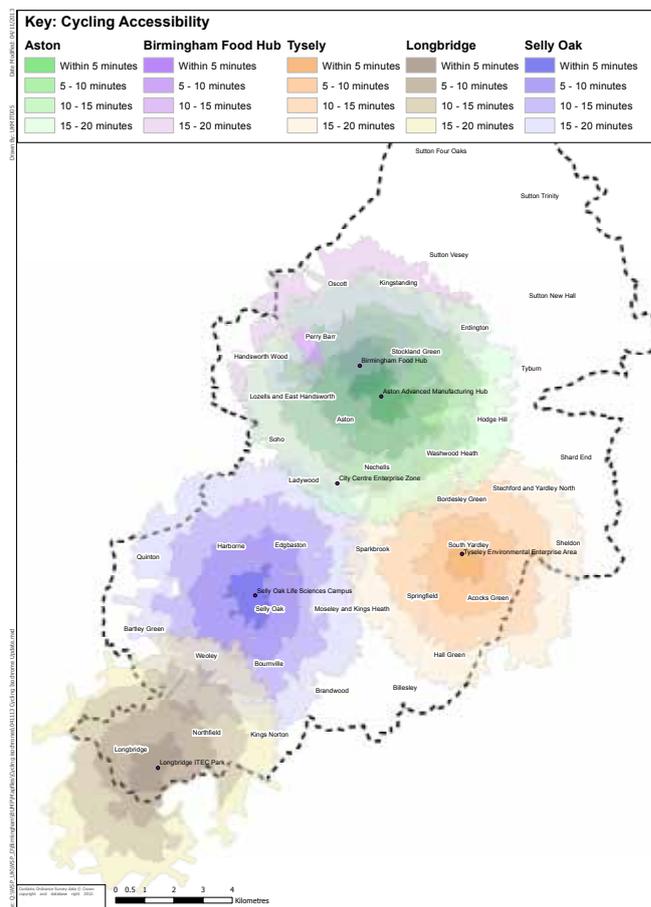
A further initiative will be to ensure that workers in these areas have access to real time information on arrivals/departures and travel times. This will need to be much more than just at the stops/stations on the mass transit networks. Real time information will also be provided in the foyer of buildings and public open spaces, meaning that people can view and access information quickly and easily, using it to make informed decisions on travel choices.



Cycle Networks and 'Hubs'

The Birmingham Cycle Revolution is seeking to create a complete network of cycle routes to serve journeys within 20 minutes of the city centre. The intention would be to roll out this philosophy to each of the Economic Zones, providing safe and attractive routes from the nearby residential areas. The travel time isochrones on the map shows the areas covered by a 20 minute cycle ride from each of the zones outside of the city centre. (city centre connectivity is discussed in Part D of this document) It is evident that just 20 minutes on a bike can cover a very large area of potential employees and visitors to these sites.

In addition to safe routes, cyclists will also need end of trip facilities (protected storage, showers, lockers etc) in order to complete their journey. These can be provided in two ways. Either each employer on the sites can include for these in their buildings, or 'Cycle Hubs' can be established within the sites which are shared across all employers. These hubs can provide high quality storage and changing facilities and can be privately run to offer cycle maintenance and purchasing equipment.



Walking Networks

An important way to reduce car use at these locations will be to try to reduce the average commuting distance for people who work there. Therefore, by targeting the nearby residential areas it is hoped that local people will be more attracted to walking to work in these areas. To do so each Economic Zone will be master planned to ensure that there are good quality (on street and off street) walking routes; providing pedestrian priority at major roads and looking carefully at desire lines between locations to ensure that infrastructure is placed in the right locations.

Managing Demand for Car Use and Behaviour Change Campaigns

As these areas will be designated as Green Travel Zones Birmingham City Council will work with developers and employers to agree policies which firstly limit the number of cars coming into the sites, but also provides assistance to develop comprehensive travel plans. These plans, which are mandatory for all new developments, have been shown to reduce the reliance on private cars and where they have been more intensively applied the greater the success.

Area Travel Plans in each of the Economic Zones will work with all businesses to apply travel behaviour change initiatives such as:

- Car sharing clubs.
- Incentives for public transport use, such as subsidised travel and salary sacrifice schemes for annual travel cards.
- Providing cycle training, both in terms of safe use but also maintaining a bike.
- Marketing campaigns highlighting the options available and the health benefits from walking or cycling to work.

Green Freight Initiatives

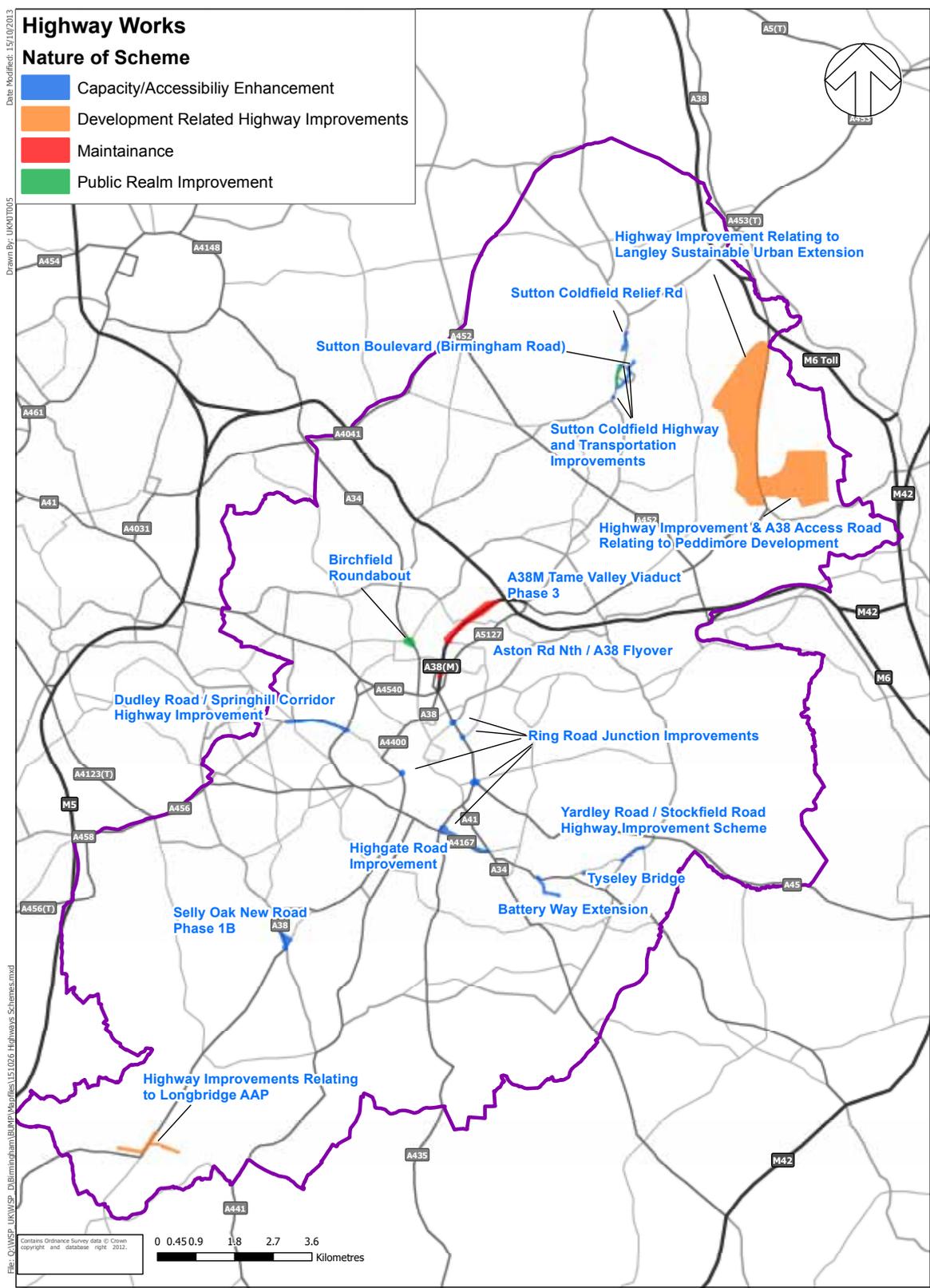
The Green Travel Zone concept will go further than just targeting reduced car commuting. The Economic Zones will be major generators of business travel and freight, of various types and sizes. As part of the Area Travel Planning exercise the city council will work with developers and businesses on these sites to seek ways to reduce impacts from freight and logistics. These will include initiatives such as:

- Consolidation of common supplies and logistics using local distribution centres:
 - All businesses on these sites will have common needs, e.g. office supplies, postage, catering etc. There could be cost advantages from sourcing these from a single supplier for the whole site. A single delivery could be made to a central distribution centre and the supplies distributed internally within the site by a green vehicle such as a cargo bike or electric buggy. By working together businesses at these sites could not only save themselves money but also significantly reduce the number of delivery vehicles travelling to/from the site each day.
- Encouraging use of low emissions vehicles for freight movement:
 - There will also be opportunities to work with businesses to encourage use of low emissions vehicles for local and regional/national freight and logistics. In doing so the Economic Zones can contribute to the city's overall carbon abatement targets and secure pollution reduction leading to improved air quality.

CITY AND STRATEGIC ROAD NETWORKS

(Meeting Objective: see page 22)

There are a number of new and upgrade schemes for the city's road network included in the Birmingham Development Plan as necessary to facilitate the growth agenda. BMAP recognises the importance of an efficient road network to the local economy and supports the need for these schemes as part of a holistic transport strategy.



Birmingham City Council Urban Traffic Management Control Upgrade

(Meeting Objectives:   see page 22)

As part of the 25 year Birmingham Highways Management and maintenance contract BCC are investing close to £7 million over the next 25 years in its urban traffic management control (UTMC) system to maximise network potential through the creation of a more robust and intelligent system that can meet current and future management requirements. This upgrade will provide one of the most advanced traffic management control tools in the country.

Birmingham's UTMC system, due to be fully operational from early 2014, will see all elements of the city's traffic management system (traffic signals, variable message signs, car park guidance signs, Close Circuit Television and fault monitoring system) connected to a single means of control, its common database, allowing all of the constituent parts of the system to interact and exchange traffic management information. The common database has the ability to proactively enact plans and strategies to respond to issues and incidents on the network by adjusting traffic signal timings, posting automated messages on messaging signs warning of congestion or directing traffic to alternative car parks when car parks reach a predetermined level of occupancy

The cornerstone of this system is SCOOT UTC a tool for managing and controlling traffic signals in urban areas. It is an adaptive system that responds automatically to fluctuations in traffic flow through the use of on-street detectors embedded in the road. A fully calibrated and validated system typically reduces traffic delay by an average of 20% in urban areas. SCOOT not only reduces delay and congestion but also contains other traffic management facilities such as:

- Public transport priority
- traffic gating
- incident detection
- real time road congestion measurement
- vehicle emissions estimates

This enhancement will mean that the urban traffic management and control in Birmingham and principally the city centre can be a lot more proactive in terms of network management and control, responding to fluctuations in network performance better than previous incarnations where it was predominantly reactive to issues and conditions on the network.

A further advantage will be that the system will generate a huge amount of information that can be provided to the general public. With the use of websites and apps traffic data can be a 'live' information tool giving real-time advice on congestion hot spots, incidents, closures or diversionary routes. It is also possible to link this information in with car parks to show where there are available spaces both on and off-street. **Once the information is provided through the UTMC system, the potential applications are vast.**

As part of its 'Smart City Commission', Birmingham intends to provide the data which comes from the UTMC as open source and run an innovation competition. Entrants will be challenged to develop useful and useable applications to support all users of the transport network.

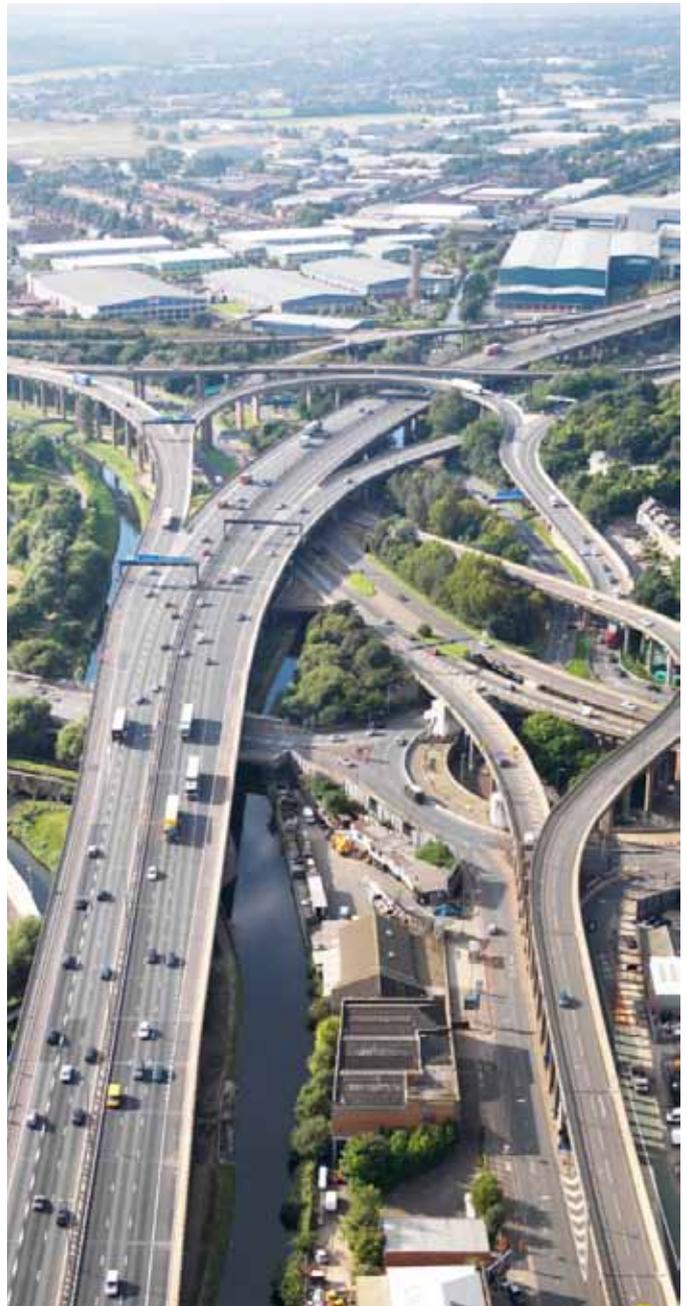
Trunk Road Network

(Meeting Objectives [👉 see page 22](#))

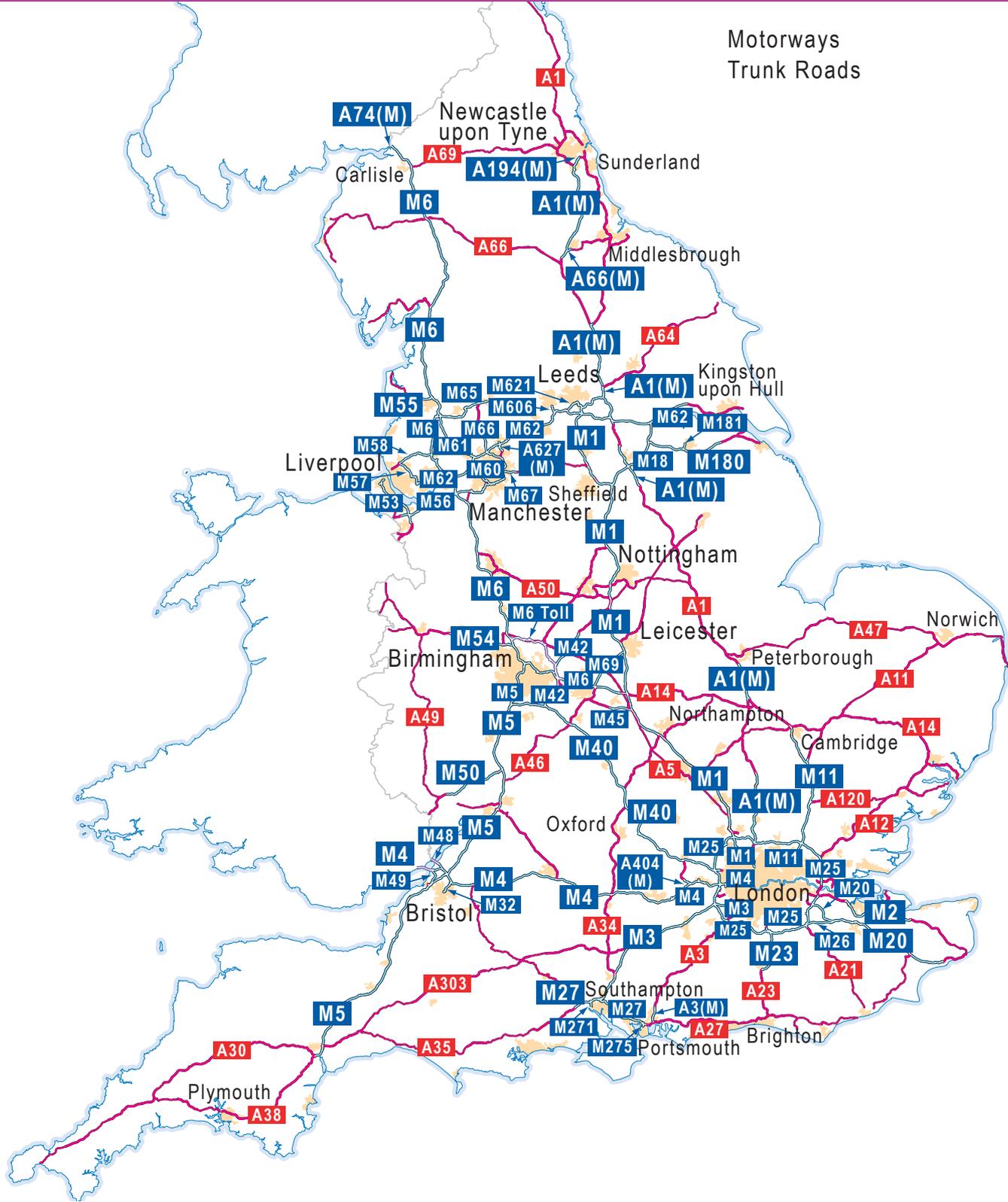
In addition to the city's road network Birmingham's economy is also influenced by the performance of the national Trunk network in the West Midlands. Furthermore, the M6 is known to deliver the greatest pollution burden to the region. The congestion on these roads causes significant disruption to business and daily life for local residents. BCC will therefore use BMAP to support and lobby the Highways Agency for upgrades to the Trunk road network, such as:

- M6 Managed Motorway Scheme between junctions 5 and 8 (currently under construction)
- M54 Link relieving congestion at the interchange between the M6 and the M54
- M5 Junction 4 upgrade
- Further Managed Motorway schemes around the whole motorway box
- Junction upgrades on all motorways at identified congestion hot spots.

In addition, BCC will work with the Highways Agency, Department for Transport and the owners to find a satisfactory resolution to the issue of the underperformance of the M6Toll. It is currently failing in one of its primary purposes: namely to provide relief to the busiest sections of the M6. It currently carries only half of its potential capacity. Specifically the road does not attract sufficient heavy goods vehicles which could provide significant relief to the M6. Many of the issues of queuing on the Queensway and A38M is caused by the difficulty in getting on to the M6 at 'Spaghetti junction', in part down to the number of vehicles staying on the M6 rather than using the M6Toll.



Trunk Road Network



Motorways
Trunk Roads

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PART C – THEME 2:

COMMUNITY CONNECTIVITY

CI – CONTEXT

This section focuses on how people make predominantly short distance trips within their local area. The aspiration is for more people to walk and cycle these journeys yet there is recognition that there are valid concerns around safety and security. The city needs to take a new approach to road safety.

Whilst there have been significant successes in reducing the number of collisions and casualties encouraging more people to walk and cycle could see rises in collisions and casualties for these vulnerable road uses. Reducing car use should help to bring the figure back down but fundamentally there needs to be a focus on and investment in measures to improve safety.

The section outlines the vision and strategy for road safety and sets out some of the measures which could be used. This includes: the potential widespread use of 20mph speed restrictions; redesigns of local centres to be more focused on pedestrian safety; and safer cycle and walking networks around schools.

This section also looks at social inequalities across Birmingham and how improved access can help reduce inequalities linked to low education, household income and health. The section describes how the public transport system, first described in Part B, has been designed to improve accessibility to some of the most deprived areas of the city; both within the city and to opportunities within the region.

BMAP is not solely concerned with travel across the city or to/from the city centre. Mobility planning must also consider how people travel to access their local shops and services. The Birmingham Development Plan's first objective is: "To develop Birmingham as a city of sustainable neighbourhoods which are safe, diverse and inclusive with a locally distinctive character."

There are two key parts to achieving this objective. Firstly land use planning has a major part to play to ensure there is a mix of services available locally so that people do not have to travel long distances to access their daily needs. Secondly, initiatives and infrastructure are needed to encourage these short distance trips to be made by sustainable modes and to ensure that people are able to do so safely.

This theme looks at how BMAP could improve the daily lives of Birmingham citizens.

Road Safety

Safety is a very significant concern for local communities. In all there were 2,216 road traffic collisions, which resulted in 3,071 casualties, on Birmingham roads in 2012 and whilst this does represent a significant decrease over the past 10 years (there were 5,657 casualties in 2003) all accidents are significant to local communities. Road safety presents a number of significant challenges to our city:

- Reported road traffic collisions in Birmingham cost £220m per annum to the local economy (in 2011 prices). This is calculated in terms of loss of output, medical costs, damage to vehicles costs, police and administration costs.
- A significant proportion of the reduction over the past 10 years has come since 2007 and it is likely that this is due to reductions in traffic levels. It is therefore possible that accident levels will increase as economic activity increases.
- Accidents involving bicycles and motorcycles have risen over the past few years, likely due to an increase in the number of these vulnerable road users.
- A disproportionate number of accidents involve pedestrians living in deprived areas. People in the most deprived 10% of the city are 2.5 times more likely to be involved in an accident (as a pedestrian) as those in the least deprived areas.
- When looking at just child pedestrians the figures are four to five times higher in deprived areas.

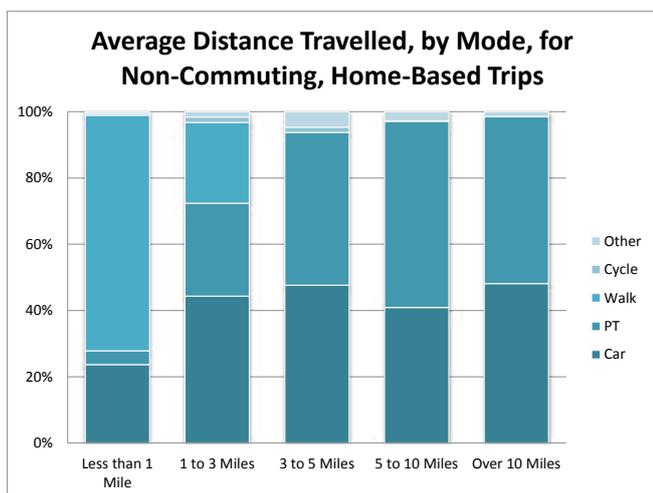
Birmingham has signed up to a target to reduce the number of Killed and Seriously Injured (KSI) casualties to an average of 394 per annum between 2011 and 2015. This is a 17.3% drop on the current level and would reduce the costs to society of accidents by £30m. The initiatives put forward in BMAP are focused on helping to meet those targets. However, it is also hoped that one outcome from making local roads safer is that people are more willing to walk or cycle short distance trips, thereby reducing the number of cars on local streets; which can create a virtuous circle by having a knock-on effect of making those streets even safer.

Current Local Travel Habits

Once again using the Household Travel Survey as a basis, it is possible to examine how Birmingham residents currently make their daily, non-commuting, trips. Looking at other general daily travel needs (shopping, leisure, education etc), and removing trips to the city centre as these usually represent more specific purposes (i.e. major high-street shopping, or leisure trips) then almost 70% of these trips are within 3 miles of the home, with around a third less than a mile.

Less than 1 Mile	32%
1 to 3 Miles	35%
3 to 5 Miles	12%
5 to 10 Miles	7%
Over 10 Miles	14%

Around a quarter of trips less than a mile are by car, with this figure rising to around 45% for trips between 1 and 3 miles.



These figures show that, on the whole, people are not travelling large distances for trips to services, such as education, shopping and leisure. However, Birmingham residents do make a significant number of short distance trips by car. In all there are approximately 250,000 car journeys (including commuting) of less than one mile made by Birmingham residents each week day; that's around a quarter of all car trips.

Each trip made by car contributes to congestion, accidents and emissions; hence each trip removed will contribute to targets to reduce these. Many short distance trips could be made by alternative, and in particular by walking and cycling; thereby helping to raise general health standards. BMAP is seeking to understand reasons for this behaviour and any real or perceived barriers to alternatives; thereby developing policies and initiatives to help people make more sustainable choices.



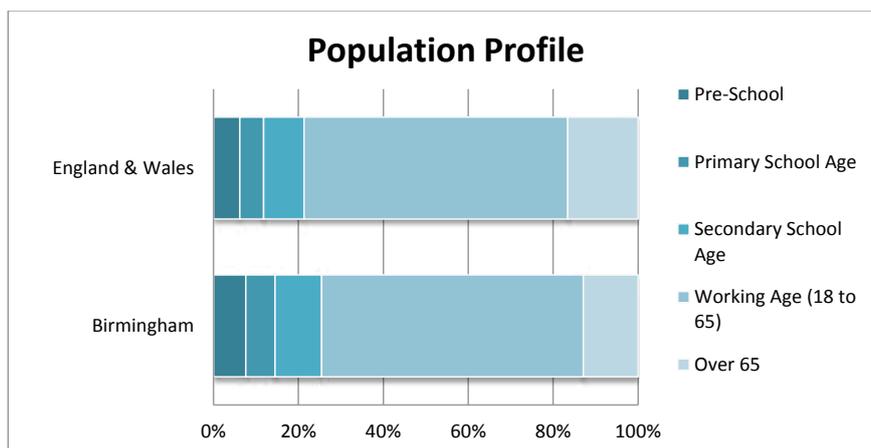
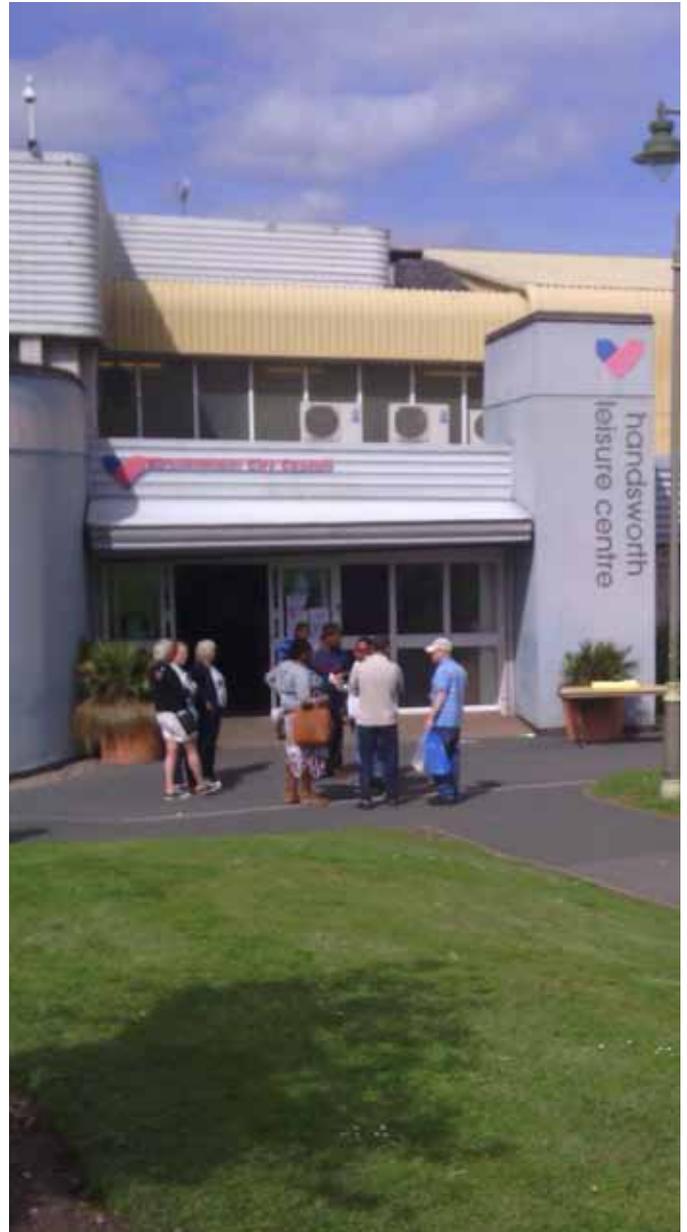
Access to Jobs, Education/Training and Leisure Opportunities

As has been discussed earlier in this document, a key part of any city’s economy is its transport system. People rely on it to access all aspects of daily lives; jobs, education and training, shopping and leisure. Analysis presented in Part A has shown that some of the most deprived areas of the City currently have very poor levels of public transport accessibility to jobs.

A further area of importance is to ensure that young people have adequate access to training and education as this has been identified as a key issue in the ‘Birmingham Commission on Youth Unemployment’. This review cited a lack of skills and Higher Education as a primary reason for high youth unemployment rates in the city. This will become even more of an issue in the future as Birmingham has a higher than average proportion of school age children compared with the rest of the UK. As the children move through the school system they will need to travel to further and varied locations to gain the skills needed for future employment.

BMAP is also concerned with people’s access to the leisure and cultural opportunities on offer in the city. Boosting health levels by improving access to sports and leisure facilities and contributing to education through access to museums and galleries etc

BMAP has developed a package of measures focused on improving safety and connectivity at a local level, but then also enabling local residents to get access to all that the city has to offer: jobs, education and leisure.



C2 – INITIATIVES AND PRIORITIES FOR ACTION

Improving Community Safety

A common factor in people choosing to drive short distances, particularly for journeys to drop children at school, is the perception of a lack of safety and security when walking and crossing busy roads. BMAP’s vision is that the city’s streets are safe environments which are for all people and not dominated by cars. To achieve this a number of initiatives are being considered:

Road Safety Strategy

(Meeting Objectives: 🚶🏻❤️ see page 22)

We are currently drafting a comprehensive road safety strategy aimed at significantly reducing the number of road traffic collisions, in particular those involving pedestrians and cyclists.

Birmingham is a world class city and our prosperity is dependent on attracting people to live here and businesses to invest here. As part of that challenge we need to ensure our residents are safe and confident in undertaking their everyday lives. This includes feeling safe and being safe when travelling on our road network.

We have already made significant progress in road safety. Nationally and locally there has a reduction in the number of individuals killed or seriously injured. We are working in times of fiscal responsibility but this is balanced by greater knowledge and a strong partnership approach allowing us to focus road safety interventions where they can make a real difference. We can now identify where road traffic collisions are occurring, who is involved and where casualties live. This has enabled more targeted work with partners to develop evidence based interventions which are effective, deliverable and integrated.

In Birmingham there has been a 46 % fall in road casualties over the past ten years from 5,657 in 2003 to 3,071 in 2012. Engineering treatment of collision hot spots has made an impact, as has legislation backed up by enforcement and improvement in vehicle design. However no matter how well roads or cars are designed or how well the roads are policed, if road users have attitudes and behaviours that add to the casualty toll we will continue to see people killed and injured in preventable collisions.

On average, each day in Birmingham, eight people are injured in road traffic collisions, one of which is seriously injured, and once a fortnight someone is killed on our roads.



The strategy coming forward recognises that there is no ‘one size fits all’ approach to the issue of road safety. Instead there are many different ways to address the complex nature of the causes of road traffic collisions. Some of the initiatives and concepts that will help to meet road safety targets include:

Initiative Area	Types of interventions
Safer Roads	<ul style="list-style-type: none"> Improved education and training for drivers and cyclists about safer road use. Greater levels of enforcement (speeding, red light jumping etc). New approaches to the engineering and designs for safer road layouts; including Local Safety Schemes and Safer Routes to School.
Safer Vehicles	<ul style="list-style-type: none"> Greater education and awareness around correct use of car seats. Raising awareness of the importance of bike servicing to ensure brakes work properly. Restricting certain vehicle types from some areas of the city, particularly lorries in residential areas or shopping areas during busy periods. Improved partnership working with the Police on enforcement issues.
Safer People	<ul style="list-style-type: none"> Further promotion and education of children through the Council’s Smarter Choices Team. More formal cycle training for school children through the Bikeability scheme.

One specific initiative which has been developed to improve safety on the city’s roads is a strategy for a comprehensive adoption of 20mph speed limits.

20mph Strategy

We are currently consulting on a strategy to place 20mph speed limits on the majority of the city’s streets. This programme will take between five and seven years to complete the whole planned network and is part of a wider strategy for improving road safety. There is a significant body of evidence which shows that by reducing speeds to 20mph there are fewer collisions and casualties, and where collisions do occur, there is a far lower risk of fatality. Other important benefits of 20 mph schemes include quality of life and community benefits, and encouragement of more sustainable transport modes such as walking and cycling.

The support of the public is vital in achieving self-enforcement and compliance. Reducing the speed limit should not be seen as an end in itself, but as part of a continuous process to encourage a change in driver behaviour and attitude. The aim of establishing 20 mph as the default appropriate maximum speed in residential areas will only be possible if a critical mass of drivers convert supportive sentiments into actions.

A city-wide ‘hearts and minds’ campaign would be developed to harness the prevailing view that average speeds in some of our residential areas are too high, with the ultimate objective of establishing 20 mph as the maximum acceptable speed in residential areas.

A programme of measures could include:

- Education - helping people to understand why 20 mph is important and how they can change their driving habits;
- Enlightenment - Developing a broad vision for 20 mph and selling the vision to win over residents, visitors, employees and employers;
- Engagement - Listening to local concerns, helping communities to change their streets;
- Encouragement - Visual reminders and rewards for keeping to the limit and driving considerately;
- Enforcement - Warnings, sanctions and penalties for breaking the limit or for anti-social driving.



Local Centre Improvements and Walking & Cycling Strategies

It is recognised that there will always be some residual reasons for driving short distances, such as: impaired physical mobility or linking a short trip with a much longer one. Nevertheless, addressing the mode choice for short trips is a specific target for BMAP.

A significant number of accidents occur on our local high streets, where there is conflict between several different road users. Many local centres are also struggling to attract local people and in turn a broad range of shops and services. Investing in better local centres will have the twin benefit of making them safer and more pleasant environments for shopping and community activities. A key factor in achieving these aims is to make pedestrians and their movements the most important aspect of priority and design.

It must be recognised that each local centre in Birmingham has its own individual character and function and that the measures applied to each must reflect that function. Some will predominantly serve local shopping functions, while others may attract people from much further away and indeed be local employment centres in their own right. The mobility strategies will include some of the following:

- By undertaking relatively simple Community Street Audits (CSAs) of the walking networks which link residential areas to local facilities it is possible to identify issues around safety and ease of access which can be improved to make walking more viable.
- Implementing the remaining actions from the Rights of Way Improvement Plan (ROWIP) to encourage walking and cycling on off-street routes.
- Cycling strategies – the Birmingham Cycle Revolution strategy establishes the principle of creating dense networks of cycle routes focused on getting commuters to the city centre. The same principle can be established for local centres by linking local residential areas with networks of safe cycling routes and providing secure, prominent cycle parking facilities.
- Raising the road surface at all crossing points – enabling pedestrians to cross at the level of pavements, on both the high streets themselves but also on side streets, not only reduces the speeds of cars but also signifies that this is a pedestrian focused environment.
- Reduced speed environments – reducing speeds as part of the 20mph strategy will improve safety but also reduce the impact of vehicles.
- Reduce turning movements - a significant portion of congestion and delays along many high streets is caused by traffic turning right; either from the street itself or from side streets on to the high street. Traffic management solutions can reduce these conflicting movements, improving traffic flow and local safety.
- Reducing Street Furniture. Recent research, most notably Manual for Streets 2 (2010), has highlighted the benefits to pedestrians and cyclists of reducing excessive street furniture. It is well acknowledged that street furniture has an important role to play in providing a sense of place, particularly in mixed use environments such as the high street, however, excessive amounts can block pedestrian routes and thus disadvantage those with visual impairments and/or mobility issues. Excessive signage can also provide a distraction to street-users, and its removal will help the most important signage stand out. Careful planning of street furniture will help improve the high street environment for pedestrians and cyclists.

- Car parking management – car parking is an important part of a local centre but it also raises issues of safety, congestion and unpleasant urban environments. Bespoke parking strategies will need to be developed which balances the needs of the local economy with incentivising necessary car trips
- We will support and encourage local centre partnerships, including Business Improvement Districts, as a model to develop bespoke, community focused mobility strategies.

A recent report by 'Living Streets' has looked at the economics of local high streets, in relation to their accessibility and attractiveness to pedestrians.

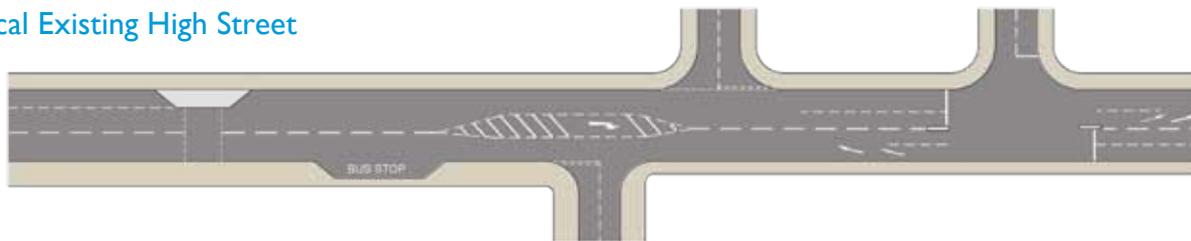
The 'Pedestrian Pound: The Business Case for Better Streets and Places' found the following evidence to invest in local centres:

- Research shows that making places better for walking can boost footfall and trading by up to 40%
- Good urban design can raise retail rents by up to 20%
- International and UK studies have shown that pedestrians spend more money than people arriving by car. Comparisons of spending by transport mode in Canada and New Zealand revealed that pedestrians spent up to six-times more than people arriving by car. In London town centres in 2011, walkers spent £147 more per month than those travelling by car
- Retailers often overrate the importance of the car – a study in Graz, Austria, subsequently repeated in Bristol, found that retailers overestimated the number of customers arriving by car by almost 100%
- Landowners and retailers are willing to pay to improve the streetscape in order to attract tenants and customers

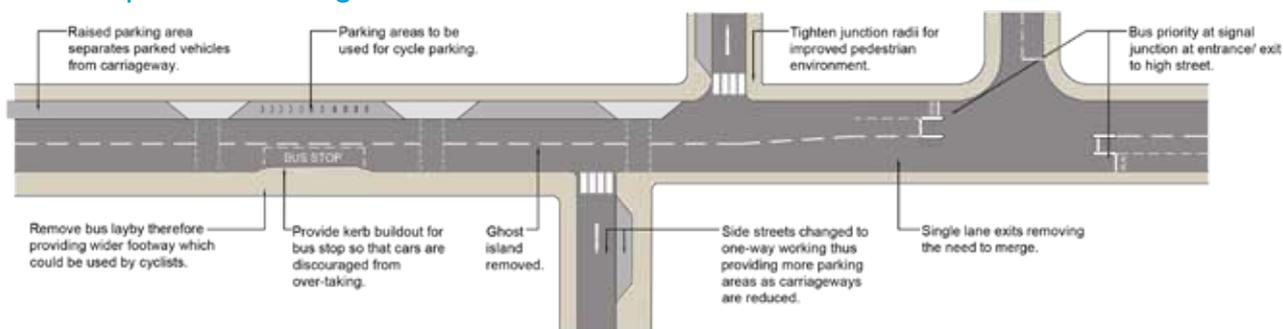
For these reasons BMAP has developed some concepts for how high streets could be remodelled in the future to provide a more pleasant environment for pedestrians, achieve public transport priority and balance the needs of all road users.

Concept for Local High Street Improvements

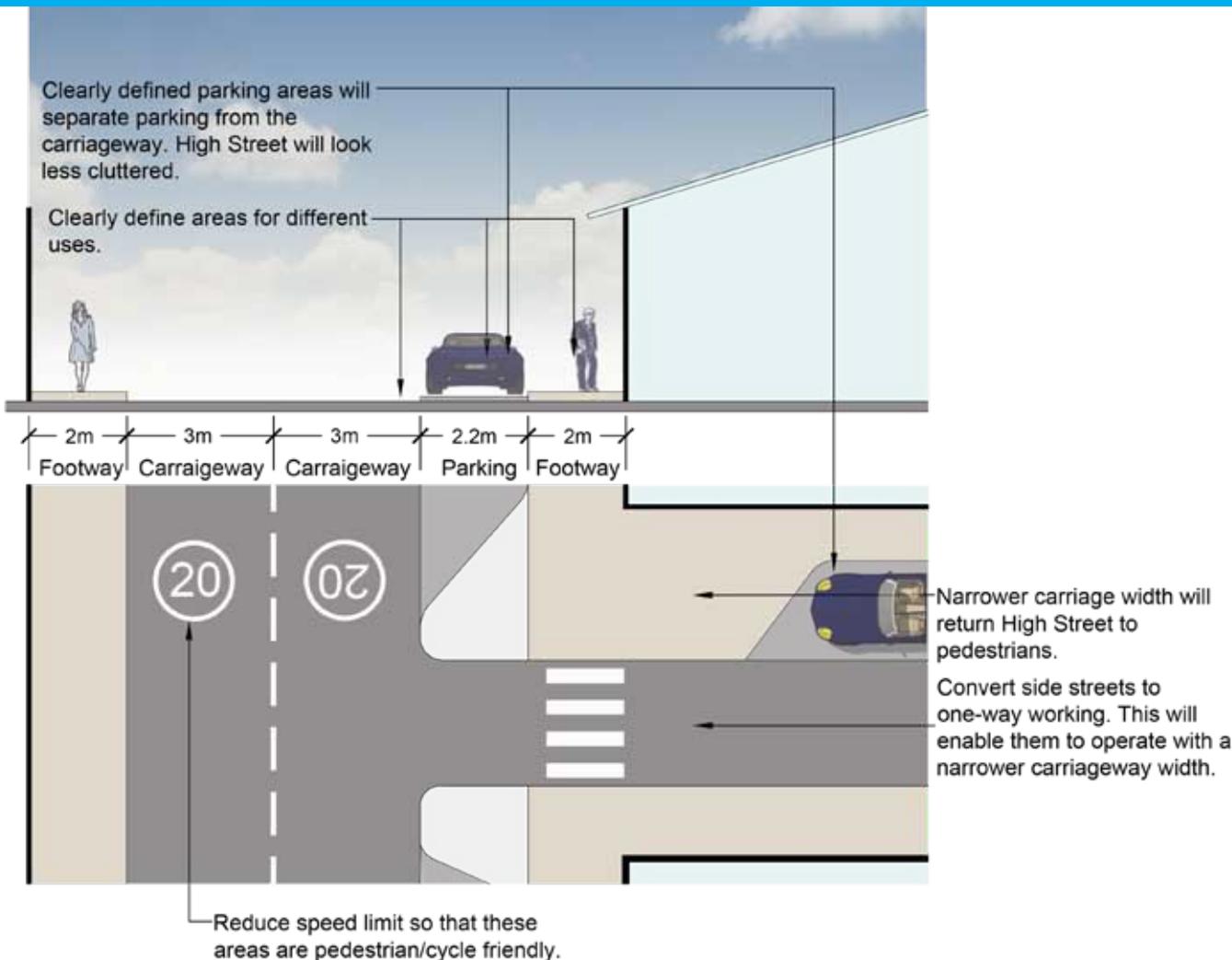
Typical Existing High Street



BMAP Concept for a Safer High Street



Managing Road Space in a Local High Street



School Travel

(Meeting Objectives: [🔗](#) [❤️](#) see page 22)

We have an on-going programme to improve pedestrian safety in the areas immediately surrounding schools and to develop bespoke school travel plans to help minimise car trips. However, despite the fact that journeys to school are some of the shortest of any trip purpose, still around a third are undertaken by car.

Walking and cycling to school can help improve children and young people's movement skills, social wellbeing, self-confidence and independence. Alongside increasing physical activity, it also helps young people explore and become more familiar with their local environment.

The main benefits to local schools in having an active School Travel Plan include:

- **Improved fitness** of children by increasing walking and cycling
- **Reduced traffic** congestion and pollution near and around the school
- Consideration for **engineering measures to improve highway safety in the area around** the school
- **Improved road safety** education and awareness for children through pedestrian and cycle training
- **Increased** parent and child interaction
- **Draws attention to local issues** and builds links between schools, parents, the wider community and Birmingham City Council
- **Creates partnerships** with Centro and public transport operators
- **Gives schools the opportunity** to gain grant funding for measures to support the travel plan.

Although this programme is in place it is recognised that the city council needs to work with more schools to develop new and update existing travel plans. To be successful these plans require the schools and parents to be actively involved in writing them but also helping to deliver certain aspects of them. We will continue to market and promote the benefits of school and community travel planning to encourage greater participation.

As part of the on-going roll out of the Birmingham Cycle Revolution 20 year strategy, we will seek to apply its principles to developing safe cycle networks connecting residential areas with schools, colleges and universities across the city.



Starting on the Right Foot for New Communities

(Meeting Objectives:     see page 22)

The Birmingham Development Plan (BDP) has identified a strategy to fulfil the anticipating housing demand to accommodate the population increase up to 2031. The strategy was to maximise the redevelopment of brownfield land before seeking alternatives. However, the strategy has also identified the need for a sustainable urban extension of around 6,000 homes on land currently identified as Green Belt to the west of the A38 at Langley

Using the average number of trips for car owning household in Birmingham, these new communities could generate almost 22,000 car trips every weekday. In fact this figure is likely to be higher as analysis of the household travel survey has shown that the further out a household is from the centre then the level of car use and the distance travelled is much higher than the City average. It is therefore imperative that the BDP's plans for these to become 'sustainable' urban extensions are fulfilled.

There are many examples in the UK where good planning and the provision of infrastructure opened right as the first new residents arrive, can significantly reduce car use from what would otherwise be expected. These new communities will need to be provided with:

- Good quality bus links to surrounding local centres, particularly Sutton Coldfield town centre
- An extensive cycle network which provides links to nearby destinations, but importantly links in with the wider city cycle network.
- A branch of the mass-transit network, described in Part B, which penetrates into the heart of the new development. At this stage BMAP is recommending that this is a CityLink service because the level of demand may not be sufficient for a full Sprint treatment. However, this can be examined in greater detail before being finalised.

- Good walking links to local services, such as schools and shops to encourage walking for short distance trips.
- Intensive community travel planning activities
- Reduced car parking provision for households; perhaps even offering some lower cost housing with no parking allowance.

All of these initiatives will help to reduce travel by private cars for residents of these new communities. However, the single most effective policy will be to plan the land use in that area in such a way that people can make the majority of their daily trip making within their local area. This will mean that there is a good mix of shops, services, schools and jobs in the local area that people can walk or cycle to easier than they could drive.



IMPROVING COMMUNITY ACCESS TO JOBS AND SERVICES

Improving accessibility for the most deprived areas

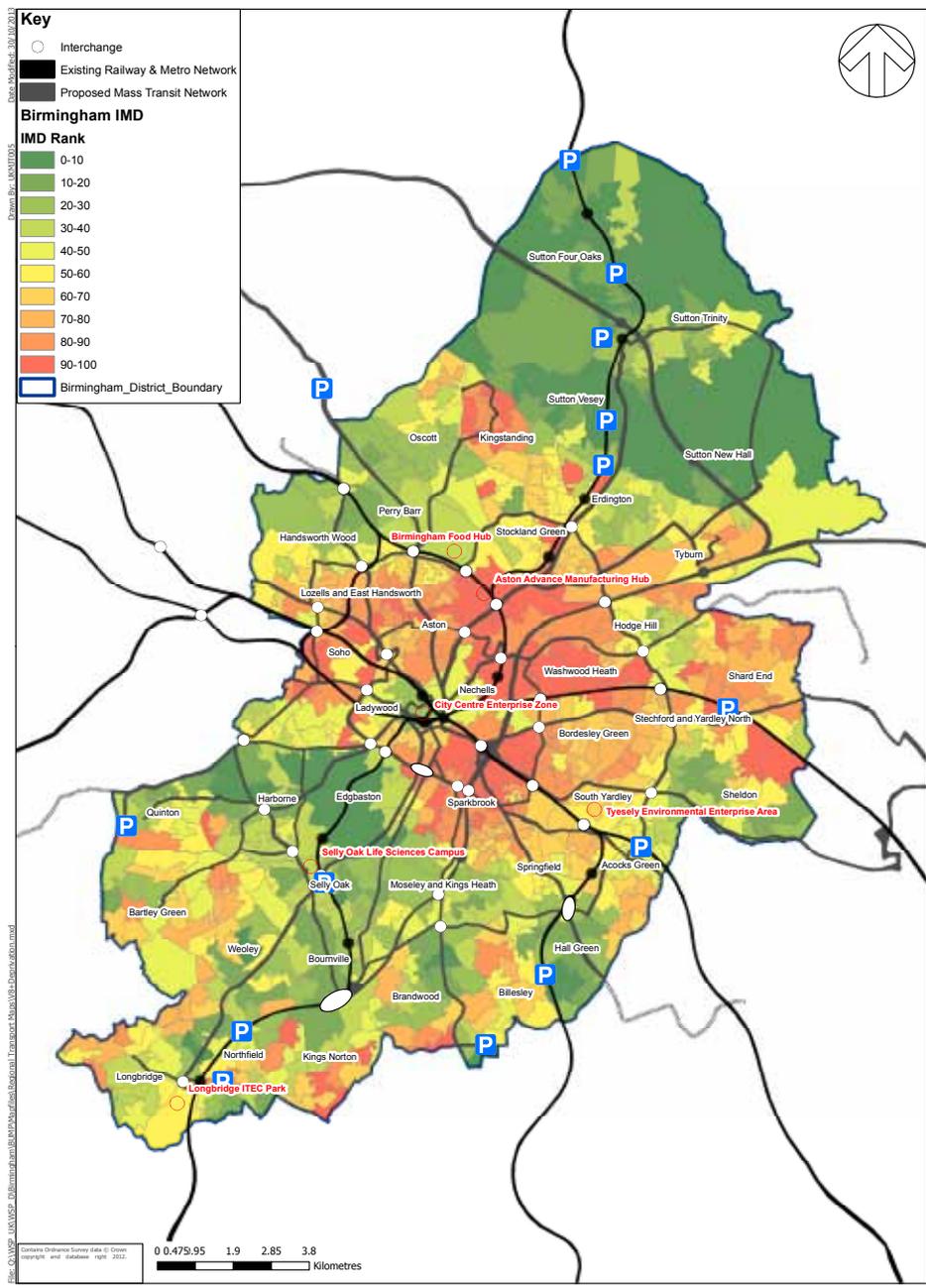
(Meeting Objectives: see page 22)

The proposed mass transit network for the city presented and described in Part B has been developed with the intention to vastly improve the way in which it is possible to move around Birmingham by public transport. It must be remembered that there is a layer of local bus services running beneath the principle network which both provide connectivity within the gaps, but also are feeders into this network.

A key aim of the network is to improve the connectivity for people living in deprived areas to access jobs and vital services (such as health and education/training) across the city. When overlaying the network against a map of social deprivation, using the Office of National Statistics (ONS) 'Indices of Multiple Deprivation' (IMD), then the density of the network and opportunity to interchange to other lines is greatest in central areas; where deprivation is highest. If the vision for this network is realised then a key outcome will be increased opportunities for all people in these areas, but particularly young people, to access the city and take advantage of jobs, training and education which will enrich their lives.

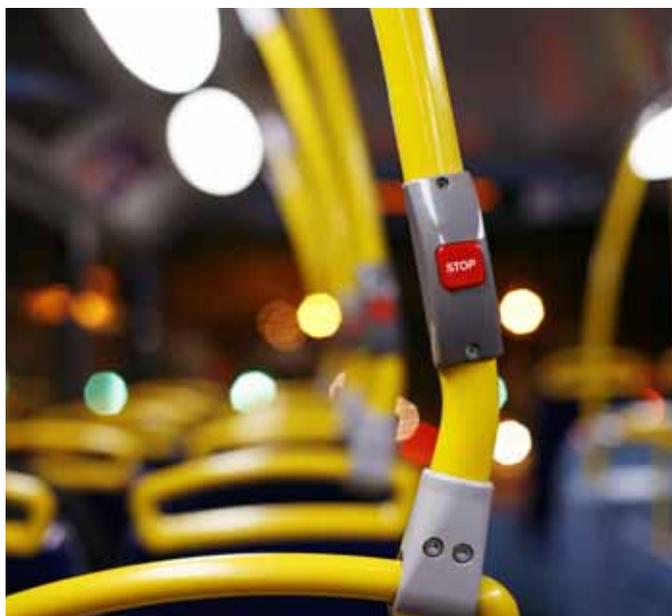
Whilst Sprint and CityLink services form the 'flagship' of the future road-based public transport network, the role of local bus services in Birmingham remains a crucial one. Buses will fill the gaps not

covered by the mass transit network and a significant number of bus services will continue to connect all areas of Birmingham with the city centre and other key locations. Many of these services will benefit from the priority measures for the main corridors leading into the centre.



However, buses will also provide feeder services into the mass transit network from nearby areas; taking advantage of the on-street interchanges which are developed. There may well be changes required to routeings and frequencies to ensure that the network integrates fully with the new mass transit corridors, and the introduction of various new developments and centres of employment will require bus service changes to ensure that accessibility and connectivity issues are fully addressed.

In addition, more localised bus services will need to be continually developed, and it is recommended that a limited number of new services be considered, especially those which form new orbital links connecting key employment, study and leisure facilities.



Cost of Travel

(Meeting Objective:  see page 22)

A further aspect of public transport accessibility is the actual cost of using the system. For those with no regular income, such as the unemployed or those in education, the cost of using public transport can be a significant barrier.

There are some mechanisms for helping those on low incomes, such as the Workwise scheme administered by Centro which provides free or discounted public transport use for job seekers to get to interviews. The desire for BMAP is to create a more equitable system and dramatically improve the accessibility of the socially excluded. Therefore, Birmingham City Council will explore a number of avenues to provide cheaper travel for those most in need. These could include:

- Exploring with Central Government the opportunity to have more say and control over the revenue provided for concessionary fares. Currently the city council is required to provide Centro with an annual revenue allocation, part of which is used to provide free off-peak bus travel to all OAPs and some disabled people. BMAP's view is that the city council and Centro will lobby to have greater control over how that revenue pot is allocated and whether there is a way to provide for a wider group of users. This may include initiatives such as a sliding scale of concessions for OAPs depending on income, and then reallocating some to provide cheaper fares for young people accessing jobs or training opportunities. There are a number of ways that funding could be allocated to different user groups, but at the moment its use is stipulated by Central Government.
- Working closely with operators to offer a wider range of tickets and discounts for young people in full-time further education.

Access to Birmingham's Leisure Resources

(Meeting Objectives:   see page 22)



Birmingham City Council runs an award winning programme aimed at getting more people fit and active, called 'Be Active'. This provides free sessions to Birmingham residents for a number of sports and activities in leisure centres and other leisure facilities. This programme is a major initiative for the city council to raise the health levels of its citizens. BMAP also has a clear objective to contribute to improving health levels; this in part is focused on getting more people walking and cycling for their daily travel needs but is also seeking to improve accessibility to leisure facilities.

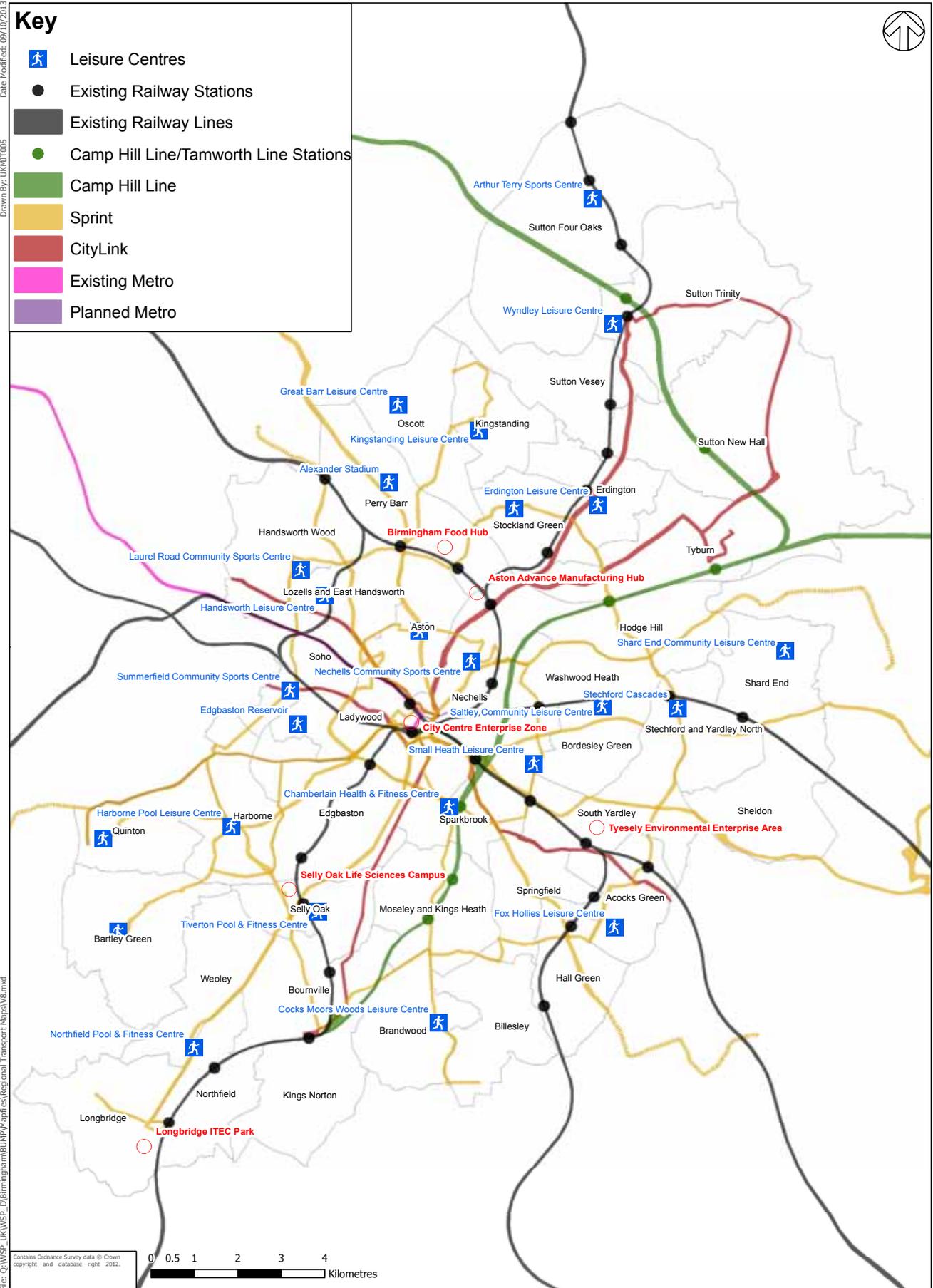
The proposed mass transit network (described in detail in Part B) goes a long way to achieving this aim, many of the Council operated leisure facilities lie somewhere on this network. The speed, frequency, ease of use and the improved ability to interchange across this network will mean that more people have the ability to access these city resources within reasonable public transport journey times.

In addition, the vision for the 'Birmingham CityPass', also described in Part B, which provides access to the mass transit network is that it becomes integral to the daily life of a Birmingham resident. This pass, or account, could be linked with the 'Passport to Leisure' and 'Be Active' campaigns to increase physical activity and raise health levels across the city. It could be used to give incentives for sustainable transport use by providing points which can then be redeemed at leisure or cultural facilities across the City.

With the rise in demand for cycling activities, Be Active has formed a partnership with British Cycling to provide free bike hire, led rides and training, again focussing on deprived communities where the cost of acquiring a bike is a significant barrier to participation and where car ownership is low and modal choice and access to employment and wider services is limited.

Six cycle 'hubs' were set up in communities with health improvement needs, either at leisure centres or in partnership with 3rd sector organisations. A particular success of the scheme has been the Women on Wheels programme which has been successful in encouraging women to cycle, most notably from ethnic minority communities who are traditionally thought not to be motivated to cycle.

The Birmingham Cycle Revolution has secured funding to significantly increase Be Active cycling activity under the banner of 'Big Birmingham Bikes'. This will see the number of hubs increased to 15, offering city wide coverage, and the number of free bikes available increased to approximately 5,000.



PART D – THEME 3: IMPROVING CONNECTIVITY TO AND WITHIN THE CITY CENTRE DI – CONTEXT

This section recognises the importance of the city centre (defined as the area within the ring road) to Birmingham and the wider region. It is a significant economic generator, regional shopping hub, home to over 30,000 people and much of Birmingham's cultural resources. As such it is a massive trip generator, with around 100,000 people crossing the ring road cordon each weekday morning peak (7am to 10am). The centre is also a major focus for job creation in the future, with a further 50,000 jobs planned in the Enterprise Zone area.

There are already ambitious and well advanced plans in the city centre, both transport infrastructure (HS2, Birmingham Gateway, Cycle Revolution, Midland Metro extensions) and land-use master planning (Eastside, Digbeth Creative, Snow Hill District, Westside, Southside Gateway etc). This section focuses on the policies and infrastructure which can link all of the aspirations and planning for the city centre together.

The ideas and concepts put forward include: how to get road based public transport into the heart of the city core and link across the centre as a whole; how to break down the barriers to movement (particularly pedestrians and cyclists) across the centre and specifically the severance caused by heavily trafficked roads; employing sustainable freight initiatives; reassessing the role and function of city centre car parking; and promoting technology based initiatives which can reduce the need for travel.

The city centre is a vital part of the city and regional economy both now and in its plans for the future. The area is also where much of the city's cultural and social identity is located. The aspiration is that the centre is at the heart of Birmingham becoming a world class city. There are a number of areas that transport policy and infrastructure can be part of the solution; the following section discusses the areas in which BMAP can contribute to this overarching vision.

The City Centre

For the purposes of this section, the 'city centre' refers to the area within the ring road, and the 'city core' refers to the area approximately bounded by Great Charles St/St Chads in the north and the Bull Ring to the south.

Covering approximately 800 hectares, Birmingham city centre acts as the regional centre for office and retail activity and serves as an important transport, legal, administrative and cultural hub. It accounts for a third of Birmingham's economic output, supporting over 150,000 jobs, attracts more than £2 billion of shopping expenditure every year and is home to over 30,000 people.

Surrounding the core the following areas constitute the city centre:

1. Digbeth;
2. Eastside;
3. St George and St Chad's;
4. The Jewellery Quarter;
5. Southside and Highgate; and
6. Westside and Ladywood;

The Future of the City Centre

Four key documents are driving development in both the Metropolitan area and the city centre:

- **Birmingham Development Plan** the strategic masterplan setting out the vision for the future development and regeneration of the city centre;
- **The Big City Plan** (section from the development plan relating specifically to the development of the city centre);
- **Birmingham City Centre Vision for movement: November 2010** (the transport/mobility/connectivity mission statement of the Big City Plan); and
- **Greater Birmingham & Solihull Local Enterprise Partnership Strategy for Growth: Strategic Framework April 2013.**

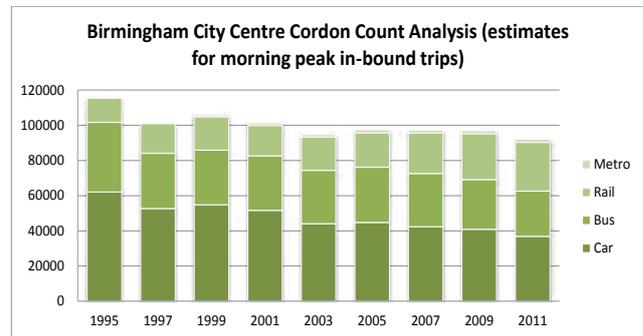
In development terms the proposals for the city centre are in the period up to 2031 to:

- Expand the city core by 25%;
- Create 50,000 new jobs;
- Deliver 5,000 new homes in the areas of transformation to encourage city centre living; and
- Deliver 65,000sqm of new and improved public spaces and 28 kilometres of enhanced walking and cycling routes.

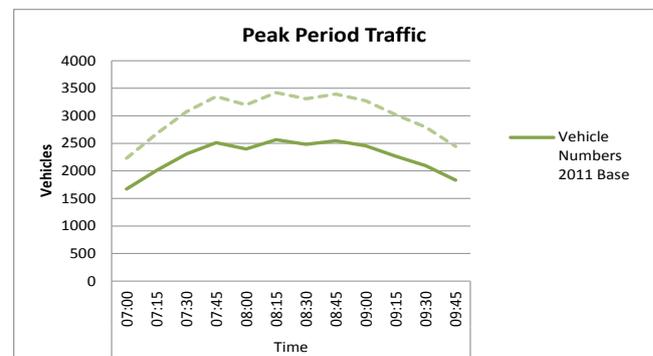
This is a significant change in a relatively small area of the City. Road congestion in the morning and evening peaks is already heavily focused on the city centre; these proposals for growth are likely to compound the issue unless a dramatic new direction is taken to the way in which people travel.

Impacts on Travel Demand

Since around the late 1990s the number people crossing the ring road 'cordon' in the morning peak period (7am to 10am) has fluctuated around 100,000. There has been a slight downturn in recent years as the recession has hit the number of jobs and amount of economic activity. What is evident is that the number of people travelling in by car has significantly decreased over time, and there has been an almost identical increase in the number of train users; people using buses has fluctuated a little but stayed at a similar level.



Using the plans for the increase in the number of jobs in the centre it is possible to estimate the future demand for trips in the morning peak in 2031. There could potentially be an additional 30,000 people entering the centre (if current patterns are maintained) and even if mode share stays at around 40:60 between car and public transport then this would bring an additional 10,000 cars and 18,000 people on the public transport system. If the current travel habits to the centre are maintained in the future then this could result in over 30% increase in traffic during the busiest periods of the day.



Looking at it another way, if the number of cars were somehow fixed at today's level then the city's public transport system would have to cope with an extra 30,000 people at peak times. As has been stated earlier in this document, the current commuter rail system is already fast approaching capacity and many of the central bus interchanges are already struggling for space to accommodate more buses.

It is clear that action needs to be taken to ensure the economic competitiveness of the city centre.

HOW DO PEOPLE TRAVEL TO, FROM AND WITHIN THE CITY CENTRE?

The Household Travel Survey, discussed in earlier sections of this document, can provide some useful information about travel to/from and within the city centre. This survey found that:

1. Travel to the city centre:

- 1 in 5 commuter trips by Birmingham residents have a final destination in the city centre;
- The majority of trips into the city centre (approximately 57%) are undertaken by public transport. However, still 43% of trips into the City Centre are undertaken by car either as a driver or a passenger;
- Of the people who live within 3 miles of the centre 46% of them commute by car – this is about a 15 minute cycle ride.

2. Travel from the city centre

- The average commuter distance for city centre residents is approximately 3.5 miles; meaning that the average city centre resident doesn't actually work in the city centre;
- 50% of car based commuting trips completed by city centre residents are less than 3 miles.

3. Travel within the city centre

- 25% of city centre residents also work within the city centre;
- Over a third of people in the city centre walk to work compared to 12% and below elsewhere. Cycling levels are almost exactly the city average with 2% of people travelling to work by bicycle.

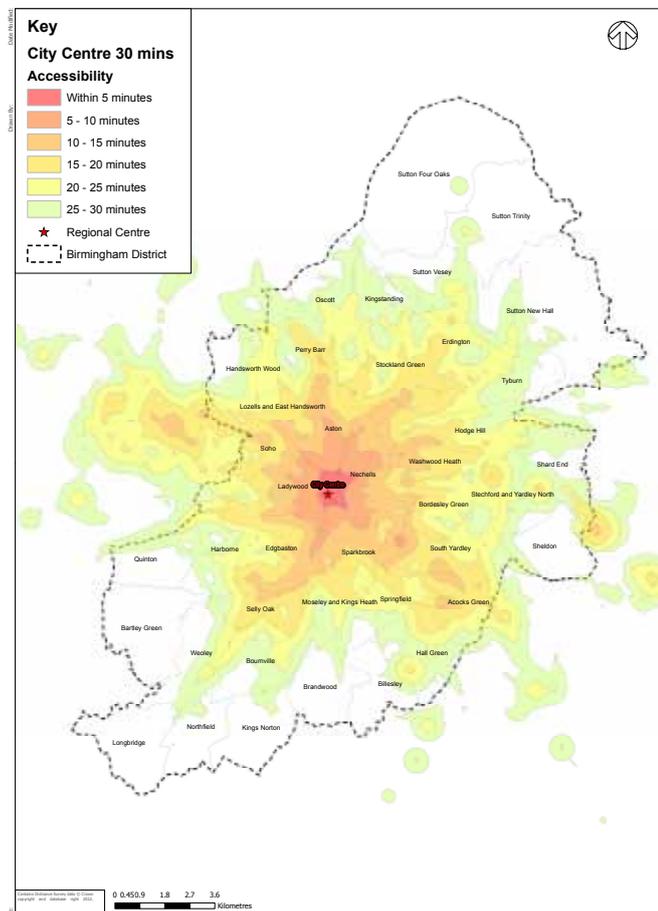


EXISTING CITY CENTRE TRANSPORT NETWORK

Public Transport coverage to and from the city centre

Accessibility by public transport is an extremely important indicator for any city. It demonstrates the options available to citizens to travel if they either don't have access to a car or consciously choose not to use it.

Using specialist software, it is possible to demonstrate the catchment area by public transport of the city centre. The map below shows the geographical area which can reach the centre within 30 minutes by public transport. 75% of the city's population lives within this catchment area, as well as large areas outside of the city. This is a good reflection on the level of service provided by the city's public transport system. However, BMAP aims to improve on this figure, and to also raise the standard and capacity of the system to accommodate higher patronage.



Rail Capacity Issues

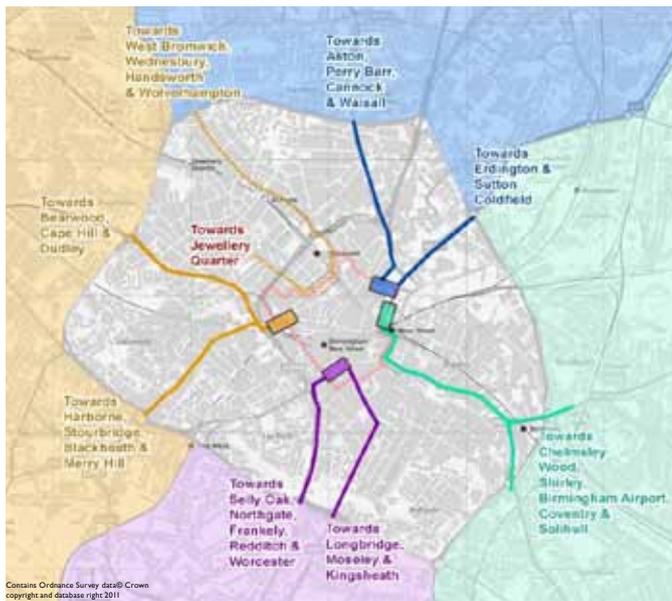
There has been major growth in rail use for travel into Birmingham for a number of years. This has coincided with increases in frequency, the introduction of new rolling stock, infrastructure upgrades (in particular the West Coast Main Line and Chiltern Line) and park and ride capacity increases across the network. Rail patronage in the West Midlands Metropolitan Area has increased by 94% since 2000/1, with Centro data showing growth of over 5% per annum over the last decade. Strong growth, over and above that predicted in industry and government forecasts, is continuing in both the regional and long distance passenger markets and also the rail freight sector. Network Rail data indicates this is resulting in serious crowding on many peak trains arriving at central Birmingham.

However, the increased peak train capacity being proposed for the West Midlands for 2014-19 (2.5% per year) is far less than the background levels of passenger growth being experienced (c. 5% per year) and is also far less than is being proposed for cities such as Leeds and Manchester. There is a serious concern that the lack of rail investment in the West Midlands Travel to Work area in comparison to other regions will fail to provide sufficient capacity, lead to severe overcrowding, force passengers onto less sustainable travel modes and act as a barrier to future economic growth and job creation.

Public Transport Accessibility within the Centre

A key objective for the Vision for Movement document was that the city centre becomes a 'Walkable City'; with a definition that specific key areas are accessible within a 20 minute walk.

BMAP examined this concept by looking at the walking accessibility of the 5 bus-based public transport interchanges to common destinations within the city centre area. The reason for doing so was a concern that because of the way in which these interchanges operate. The predominant service pattern is that each area of the city has bus routes that terminate at one or other of the interchanges. This means that if a user's final destination is elsewhere in the city centre then there could be a significant walk to reach it.



It can be seen that the majority of key destinations are within the definition of a 'Walkable City'. There are however some areas outside of this benchmark; this is the case for the journey time between public transport hubs on the far eastern and western extents of the city centre and destinations on the opposite side.

A key element of BMAP is to seek ways to improve City Centre public transport penetration and reduce walk time accessibility issues.

Accessibility from Public Transport Hubs		Bull Street and Priority Queensway Interchange	Moor Street Interchange	New Street Interchange	Paradise Circus Interchange	Snow Hill Interchange
New Street Station		5-10	5-10	0-5	5-10	5-10
Colmore Business District		10-15	10-15	10-15	0-5	0-5
Brindley Place and ICC		>20	>20	15-20	0-5*	15-20
National Indoor Arena		>20	>20	15-20	0-5*	15-20
The Mailbox		15-20	15-20	5-10	5-10	10-15
The Bullring		5-10	5-10	5-10	5-10	10-15
5 Transformation Areas	Westside	15-20	15-20	10-15	0-5	5-10
	New Street Station	5-10	10-15	0-5	5-10	5-10
	Snow Hill District	5-10	10-15	10-15	0-5	0-5
	Eastside and HS2	0-5*	5-10	15-20	>20	15-20
	Southern Gateway	10-15	10-15	0-5*	15-20	15-20

* Denotes destinations which are served by bus route en-route to City Centre terminus

City Centre Car Parking

The availability, cost and location of city centre car parking plays an integral part in mode choice for trips to and from a city centre and Birmingham is no exception.

City centre car parking is generally split into 4 types:

Off Street car parking – i.e. multi storey / surface level car parks – The 23,000 off street car parking spaces in Birmingham city centre are split approximately equally across three types of suppliers: the city council, NCP and a collection of small operators.

On street car parking – Significant areas within the city centre are contained within controlled parking zones (CPZ's) with pay and display bays being the main on street control. There are three CPZ's covering the city core, Gunsmiths Quarter and Jewellery Quarter with around 2,770 on street bays and 600 resident permit bays.

The primary objective is to provide convenient short – stay parking to support shops, businesses and leisure activities, whilst maintaining a high turnover of spaces to tackle congestion by minimising the need for motorists to search for a space

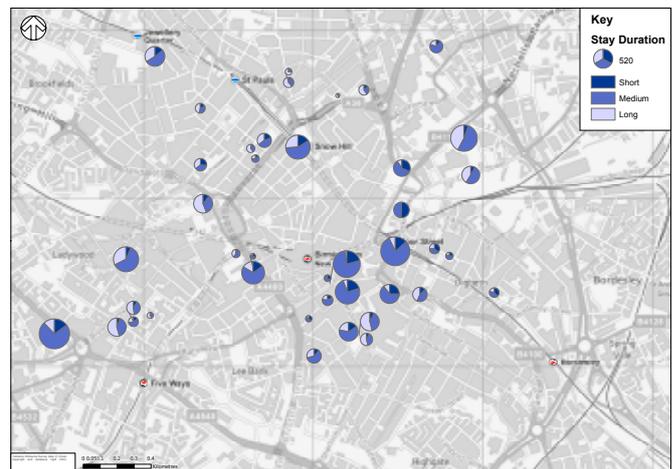
Private Non Residential (PNR) parking – Private developments car parking for example car parking spaces associated with businesses. No definite figure exists for the amount of PNR parking in the city centre but it is estimated to be between 20 and 40,000 spaces.

BMAP's analysis of the available usage data (Collection of BCC and Private controlled car parks covering approximately 16,000 spaces or approximately 70% of available off street car parking data) showed the following split of duration during weekdays:

- Short (less than 1 hour) - 18%
- Medium (2 to 7 hours) – 57%
- Long (over 7 hours) – 25%

This shows that a quarter of the off street parking spaces in the centre are being used by people parking all-day, from which it can be inferred that the majority of these are commuters.

Whilst a crude metric, if we extrapolated this figure across the total parking stock in the city centre, we would have approximately 6,000 commuters parking all day in off street city centre car parks.



In addition to these paid parking spaces, it is estimated that there are 20 – 40,000 or more private, non-residential, parking spaces for city workers within the central area. Whilst it's not known how many of these are occupied on a daily basis, it demonstrates the scale of the parking supply. Combining these two, it can be said that there could be up to 50,000 parking spaces in the centre of Birmingham used or usable by regular daily commuters; the majority of these are in the central area and are free to use (for employees).

There is also an unofficial fourth parking area, on street uncontrolled parking, areas in the city centre outside of the control of CPZ's or associated on street restrictions. Whilst the amount of this parking is difficult to quantify, the impact of any changes to the three formal areas of car parking in the city centre on this informal parking stock will need to be carefully considered.

Freight and Logistics Movements

BMAP will ensure that measures to improve the efficiency and movement of people across the city also has a positive impact on the movement of goods. BMAP is seeking ways to keep roads moving to improve freight efficiency in the city. The strategy is also focused on reducing negative environmental and social impacts from polluting and noisy vehicles in central areas.

The figures in the table (below) show that whilst heavy goods traffic is relatively small (around 3% of all traffic), there are significant numbers of light goods vehicles, upwards of 9,000 per day. A balance needs to be found between improving the efficiency of distributing goods into and around the centre and also improving the environment in that area.

Location	Total Vehicles (Daily 2012 Counts)	%HGV	%LGV
A38 (Immediately south of Dartmouth Circus)	64,594	3.2%	10.8%
A38M (Immediately south of Dartmouth Circus)	16,149	3.2%	10.8%
A38 Corporation St	80,743	3.2%	10.8%
A4400 St Chads	85,572	1.4%	10.6%
A4400 Great Charles St	25,140	1.4%	10.8%
A4400 Suffolk St	73,992	1.6%	10.9%
A4400 Bristol St	63,457	1.5%	9.9%

Taxi's in the City Centre

Birmingham has currently licensed 5,900 taxi's, made up of 1,400 'London Style' vehicles known as a Hackney Carriage and 5,500 private hire vehicles (PHV's) which are required to be booked in advance with a private hire operator) operating in the metropolitan area.

Estimates show that in many cities, taxis drive on average more than 50,000 miles per year in inner-city areas, driving up to ten times or more the distance per day than personal cars. Though taxis only account for around 2 per cent of the total motor vehicle population they can be responsible for approximately 20 per cent of local noise or air pollution.

Who lives in Birmingham City Centre?

It mustn't be forgotten that over 30,000 people live in the city centre; within the ring road. BMAP therefore has a responsibility to be part of improving the lives of these residents. The central area residents have a distinct make-up:

- **Young, free and single population** – The average age of residents within the City Centre area is lower than the Birmingham average, at 31 compared to 35. The city centre population contains far fewer children compared to the other quadrants. Almost half the City Centre's population are aged 20-29 years impacted by the large student population, making up a quarter of the city centres population compared to only 10% city wide.
- **Deprived Population** – The Ladywood ward (which forms part of the city centre) is within the top 10 most deprived wards in Birmingham with over a quarter of the ward population living within the 5% most deprived in England. The Job seekers Allowance claimant rate within Ladywood has increased steadily over recent years, to approximately 24% in 2011, which is double that of the Birmingham average. Levels of long term unemployment are particularly high for Ladywood at 7% in comparison with approximately 3% across Birmingham. However, there is now a distinct divide in the residential population. There are deprived areas around the current/former local authority housing areas of Ladywood and Highgate/St Luke's; but equally there are some very affluent pockets of population in and immediately around the city core.
- **Educated population** – Contrary to levels of deprivation and unemployment, 42% of the City Centre population are degree educated, higher than any other part of the city.
- **A carless population** – Less than half the population have access to a car or van.

The make-up of the city centre population highlights polarised segments of the types of people that live here. Whilst both younger populations; the first has low income, low education and high levels of unemployment whereas the second comprises well-educated, city dwellers.

BMAP recognises the following issues affecting people who live in the centre:

- They are surrounded and segregated by the busiest roads in Birmingham – this affects their safety, health and the quality of built environment around them,
- Many of them do not own a car, some by choice and aspire to but can not afford one. Their mobility to the rest of the city is crucial. BMAP needs to create an environment where not owning a car is neither an inconvenience or hampers them from taking advantage of the city's opportunities.



D2 – CITY CENTRE TRANSPORT VISION AND PRIORITIES FOR ACTION

The city centre has undergone a significant amount of visioning and planning in recent years. BMAP does not intend to readdress recent plans; to a certain extent the intention is to bring the transport elements all together in one place. A more detailed piece of work is currently being undertaken which will present a Transport Action Plan for the city centre. However, BMAP presents the overall vision and concepts which will be subsequently developed in detail.

What has been committed to achieve this vision?

Some major pieces of new transport infrastructure are already committed to Birmingham City Centre. BMAP will seek ways to ensure that Birmingham develops its centre in such a way that it takes full advantage of the opportunities generated by these schemes.

1. Birmingham New Street Gateway Plus project

The Gateway Plus (previously known as Birmingham Gateway) project is a redevelopment scheme to regenerate Birmingham New Street railway station and the Pallasades Shopping Centre above it (to be renamed Grand Central). The project aims to enhance the station to cope with increased passenger numbers as well as expected future growth in traffic.

The current New Street station was built to cater for 650 trains and 60,000 passengers per day, which was roughly the same usage it experienced when it was first constructed in the late 1960's when it was believed that demand for rail travel would decrease.

However, it now caters for 1,350 trains and over 120,000 passengers - twice its design capacity. Passenger usage of New Street has increased by 50% since 2000. It is predicted that passenger usage of the station will increase by 57% by 2020.

The project is forecast to bring £2.3 billion new investment into the West Midlands region. The redevelopment of New Street is expected to accommodate passenger growth to at least 2046. Between 2,200 and 3,200 permanent jobs will be created as a result of the redevelopment. The new station will be an improved transport destination for tourists and is a key part of the redevelopment of Birmingham by improving the city image. The New Station will fully reopen in late 2015.



2. Midland Metro Birmingham City Centre Extension

The Birmingham City Centre Extension (BCCE) will take Midland Metro from its current terminus at Snow Hill and extend it into the heart of the city to the newly redeveloped New Street Station, with trams due to be operational by 2015.

This route ensures that high quality public transport links serve and support the Gateway Plus scheme and maximise the benefits of the regeneration of the station and the surrounding area.



Centro are also currently consulting on a further extension to the Metro network, from New Street to Centenary Square with a tram operating every six minutes, linking Centenary Square and Broad Street with central Birmingham and New Street Station, Snow Hill and the Jewellery Quarter

It is envisaged that Metro will complement the proposals for the redesign of the public realm in Centenary Square as well as providing an important connection to the regeneration areas of Baskerville Wharf and Arena Central complex and improving access to the Broad Street and Brindley Place entertainment and office quarter.

Should the proposals gather appropriate support and approvals works could start in 2015 and be open for public use in 2017. With the whole network in place Metro will create opportunities to connect directly with HS2's city centre station, New Street Station and Birmingham International Station for Birmingham Airport.

3. Birmingham Cycle Revolution

In August 2013 Birmingham City Council were awarded £17million of government funding from the Department for Transport's Cycle City Ambition Grant for our Birmingham Cycle Revolution scheme. This funding is will be topped up by the City Council for a total pot of around £24 million for cycling improvement schemes across the City. Birmingham Cycle Revolution is a 20 year strategy to enable cycling to become a mainstream form of transport across the city through much improved cycle access to the centre. The proposals to be delivered as part of this bid will result in a 27% increase in cycling in the bid area with an additional 2,000 cyclist per day by 2016 This will result in a reduction of 8,000 vehicle kilometres per day across our congested highway network reducing the adverse impacts of road traffic.



By 2016 the City Centre will benefit from a series of mostly minor measures, including some contraflow cycle facilities and signing, to improve routes into and through the city centre. These measures will also make use of existing pedestrianised areas within the city core and provide more clarity on their availability to cyclists. There will be approximately 12km of new and 13km of improved routes for cyclists in the city centre as a result of this bid, providing simpler, more direct routes across the city.

4. High Speed 2 and the city centre

High Speed 2 (HS2) is potentially the most significant transport infrastructure project in the UK since the motorways were built in the 1950s and 1960s. HS2 will have a significant impact on the economic and transport landscape in Birmingham and specifically the city centre in the medium term. Demand for inter-city journeys, commuting and freight rail transport is rising and is expected to continue to do so in the future. This means that Britain's railways are already over-stretched and will get more and more overcrowded over the next 10 to 20 years.

HS2 will tackle this problem by providing a new railway line – the first line north of London for 120 years. Phase One will run between London and Birmingham and tackle the congestion and overcrowding on the West Coast Main Line (WCML). Phase Two will do the same for the WCML and other major routes north of Birmingham to Manchester and Leeds. Construction of Phase 1 is due to start in 2017 and be completed by 2026/7, with Phase 2 scheduled for opening in 2023/33.



It is anticipated that HS2 will unlock capacity for a more intensive and/or varied commuter and freight services on the West Coast Mainline, enabling a potential to double or treble the levels of service on some routes into the city.

The HS2 'Y' network itself is predicted to bring 22,000 extra jobs in the West Midlands, with understandably many of these in Birmingham and Solihull in the vicinity of the proposed stations. However economic analysis work by KPMG, on behalf of Centro, suggests that up to 50,000 extra jobs could be created for the West Midlands if the HS2 'Y' network was combined with improvements to local and regional rail connectivity.

The Birmingham City Centre station is to be in the Eastside area of Birmingham, roughly at the site of the London & Birmingham Railways 1838 Curzon Street Station and near present-day Moor Street, whilst the Birmingham Interchange station is to be located close to Birmingham Airport in the Solihull district.

Both stations are fully integrated into local land-use development plans; HS2 proposes to unlock major potential in Birmingham's Eastside Master plan with a total of 8,000 passengers per peak hour passing through the station once the HS2 'Y' network is fully complete, and the UK Central Master plan has the Interchange station at its heart.

Step change in city centre transport in the short term

It is clear there are a number of high profile transport schemes that are proposed in the city centre (and beyond) in the short and medium terms that will deliver a step change in movement into, out of and around the city centre. Be it HS2 and the New Street Gateway Plus scheme (strengthened Birmingham’s role as the hub of the transport network) the Metro City Centre extension (‘high quality transport links’) Birmingham Cycle Revolution and the Centro Smarter network Smarter choices (‘sustainable means of travel into, out of, and around the city, which are attractive safe and easy to use’) and the upgraded UTMC system and ring road pinch points schemes (cut congestion and uncertainty over travel times) all of these schemes will be key drivers in delivering the vision for transport in Birmingham.

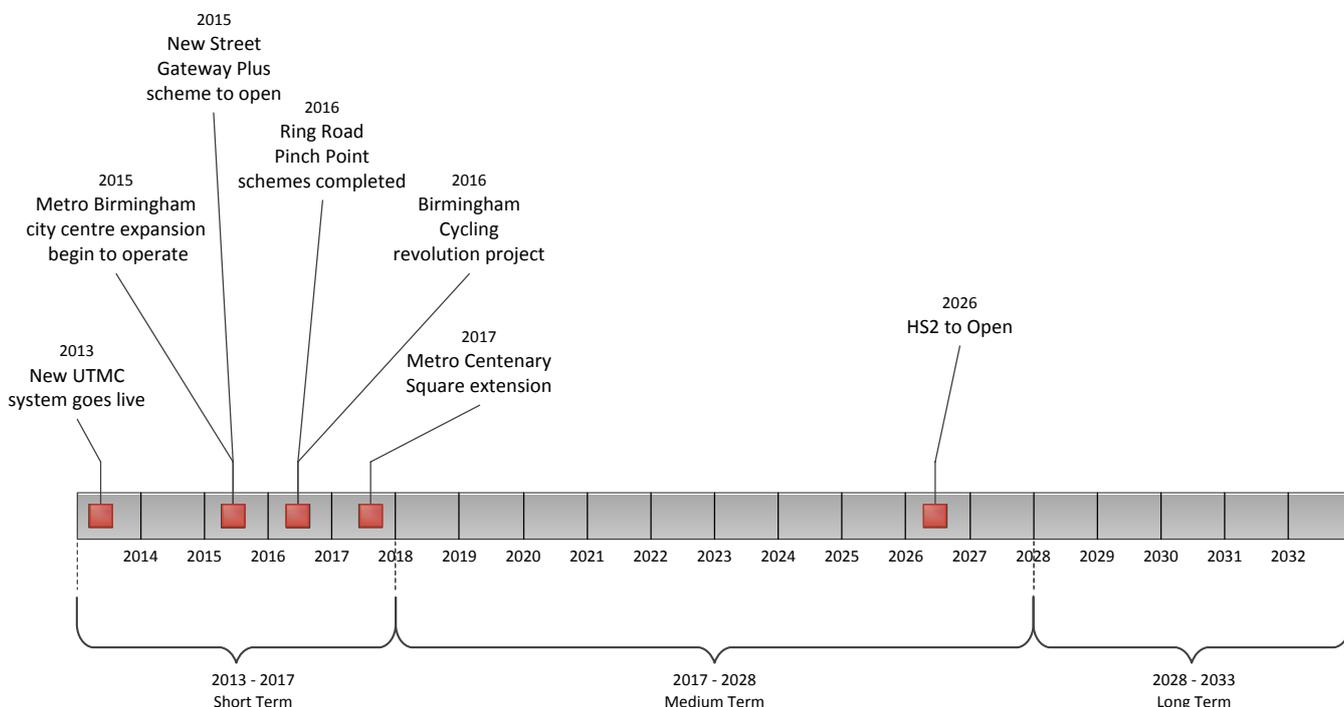
All of this transport infrastructure will support the

planned redevelopment of the centre in areas such as Southside, Paradise Circus, Snow Hill, Eastside and Digbeth. The city centre will be transformed over the next 20 or so years.

Generally due to the diverse origins of funding and differing timescales for the application and granting of each, transport improvements will often come forward in a piece meal fashion, meaning that benefits across the system cannot be realised in a similar timescale and all modes do not move forward in a uniform fashion.

However; as the timeline overleaf below the city centre will see a step change across the majority of modes of travel to, from and within the city centre in the short term, with a number of key schemes delivered within the next 2 to 3 years.

BMAP aims to provide a package of schemes and policies which can enhance the success of these flagship projects:



WHAT MORE DOES BMAP NEED TO DO TO DELIVER THE CITY CENTRE VISION FOR TRANSPORT?

BMAP Priorities for action

BMAP uses the following planning and policy documents as its basis: the Birmingham Development Plan, the 'Big City Plan', the Vision for Movement and the emerging Greater Birmingham and Solihull Local Enterprise Partnership's 'Delivering Growth' strategy.

As such BMAP's city centre strategy is tailored to the three key principles set out in these documents:

- **Improve and Integrate the Public Transport network;**
- **Address city core and quarters connectivity;**
- **Provide and promote range of sustainable transport choices.**



1. Improve and integrate the public transport network

Concept 1: Improving city centre public transport accessibility

As demonstrated earlier, the current public transport arrangements for the city centre are good for getting in, but not for getting around. Virtually all services terminate (buses and trains) in the core, leaving the user to travel to their final destination on foot. For some people this could be a significant distance and either adds extra time to a journey or dissuades some people from doing it. BMAP therefore recommends:

Sprint at the heart of the city

(Meeting Objectives:  see page 22)

One of the failings identified for Birmingham's current public transport system was that it provides very few opportunities for getting across the city. BMAP has sought ways to address that when developing the Sprint network described in detail in Part B; and have developed some thoughts as to how that could be achieved.

A number of the Sprint Lines would provide a very high frequency service connecting New Street, Moor Street and the proposed HS2 stations, whilst other Sprint lines would operate across the city centre via Corporation Street to provide a through service from the south west of Birmingham to the north east.

These would improve connectivity in the greater Birmingham area, where currently multiple connections are often necessary for cross city centre journeys. The Sprint Lines would also be tightly integrated with the heavy rail stations, Metro, bus services using the CityLink corridors and the other local bus services terminating in the city centre.

BMAP is not necessarily presenting these routes as the only means of achieving the desire for cross city connectivity, some more detailed investigation is needed to ascertain their detailed feasibility. However, one issue is for certain, if Sprint is not given the adequate level of priority across the centre's road network then the concept will not be achievable. Vehicles will get stuck in with regular traffic, delays and unreliability will ensue and it will fail. Follow on work from BMAP will begin to examine the possibilities of how these aims can be achieved in reality.

BMAP believes that a fundamental strategy should be to ensure that any public transport services operating in this way should be, effectively, emissions free at source. Achieving this would significantly enhance the environment and raise the quality of service provision. As discussed in Part B, it is recommended that the city look into using technologies such as inductive electrical charging as a means of powering public transport.



City centre demand responsive transport

(Meeting Objectives:  see page 22)

In terms of the circulation of people around the core and city quarters, BMAP proposes that a Demand Responsive Transport (DRT) service is considered, which would combine elements of Interchange DRT and Network DRT described below, to operate wholly within the city centre area:

Interchange DRT Local area feeder links

these are services which provide links to public transport nodes or interchanges from areas that are not served by the conventional, fixed route public transport network. DRT can be a cost effective way of providing these links due to the dispersed nature of demand.

Network DRT or Network Enhancement services

these complement the more mainstream public transport services by extending the operating hours or geographical reach of fixed route services. Such services often operate with a semi-fixed route, which can be deviated from on demand.

DRT can be defined as a flexible form of public transport which provides door to door journeys on demand to provide a more convenient form of transport than conventional public transport. DRT most commonly caters for pre-booked journeys, and this is the normal method of operation in the UK.

However, in looking at the widest application of DRT, different schemes can be designed to target different markets. Understanding the market for potential schemes is crucial to the successful implementation of schemes. In simple terms, the markets can be split into two categories; thus tapping in to the two principal groups of people that live in the city centre:

- Captive markets, which tend to be aimed at people with restricted transport options and no access to a private car, and
- Choice markets, generally for people who might have been able to make the trip by car

Such a service could operate using a semi-fixed route basis, connecting the various quarters with the business and retail centre and key public transport interchange points, deviating to collect and set

down passengers close to the starting point or end point of their journey. Whilst these services tend to need on-going subsidy, on-going revenue costs will be eventually supplemented and eventually covered by developer contributions that will begin to come on line with the mass of development in the city centre.

Taxi licensing review

(Meeting Objectives:   see page 22)

A review of the current licensing standards could see the introduction of everything from credit / debit (or potentially smart card) readers in vehicles, introduction of GPS equipment for tracking and monitoring use, mandatory eco-driving training for drivers, or perhaps most pressing and fundamental, the introduction of emissions standards for vehicles.

Historically, although transport is identified as one of the main contributors to air pollutants, there has been little focus on reduction of fuel emissions of taxis in comparison to other models of transport. BCC do not currently enforce emissions specific criteria on new licenses for taxi vehicles. Evidence from London suggests that the capital could save four thousand tonnes of CO² emissions every week if all of the capital's 'black cabs' were fully electric, research commissioned by the UK low carbon motor, EcoVelocity revealed in 2011. That figure would more than triple if London's PHVs also made the switch to electric power.

Birmingham will consider relevant best practice and how improving or introducing regulations around vehicle emissions can deliver benefits for the operator, environment and overall city quality of life.

Taxi Quality Partnerships

(Meeting Objectives: 🔄 see page 22)

To overhaul the current licensing system in Birmingham would require input and consultation with the taxi industry in the city. Taxi Quality Partnerships (TQPs) operate on a similar premise to a Quality Bus Partnership as a framework to facilitate joint working between Hackney Carriage and PHV Operators and between other stakeholders.

BCC taxi licensing department representatives currently meet with Hackney Carriage and Private Hire representatives every month to promote joint working and regular discussion and liaison. Recognising that to function effectively taxi systems and their operational modalities need to be integrated and managed as part of a wider transport system, there would be scope to expand this forum into a TQP.

Taxi Sharing

(Meeting Objectives: 🤝❤️ see page 22)

Informally this works where a taxi operates similar to a bus, running between two set points, generally during the morning and evening peaks, picking up passengers who share the fare. Passengers benefit as the fare is reduced as the cost is shared, drivers are able to increase revenue and there are fewer taxi trips overall, resulting in less noise, disruption, traffic congestion and pollution.

Formally a number of taxi sharing mobile and smart phone applications are currently being trialled across the country and feedback to date has been positive. These enable people who are going in the same direction to easily and safely get in touch, with no mobile phone numbers shared between parties, and arrange to share a taxi. As such applications are not dependent on operator input (it is the travellers that find one another and then the taxi) it can be rolled out relatively easily.

Within Birmingham there would be scope to trial such systems in the city centre where there will be a density for taxi demand to similar locations, for example to the airport or rail stations. Secondly such a system could supplement or substitute the public transport system to cope with increased demand outside of high frequency periods of coverage (i.e. weekends and evenings for sporting events, concerts, shows etc.) to move visitors around more efficiently when the frequency of public transport means services are not as readily available.

There would also be scope to trial such a system across the city centre Business Improvement Districts (BIDs) with business to business travel a potential target audience for such a system. With visitors arriving at similar points (airport / train station) and with little appetite or knowledge of the local public transport system, such a business driven system could reduce the amount of single occupancy taxi journeys.



2. Address City Core and Quarters Connectivity

Concept 2: City core and Quarters – Breaking down the barriers

The Big City plan identified the connectivity issues across the city centre. These barriers are both physical (The A38 and the middle ring road) and perceived (visitors / residents unfamiliar with the system of underpasses and subways).

BMAP has taken this identified need and considered the drivers of movement in the centre and understanding where these linkages are required.

Based on the key attractor's assessment, BMAP has identified clear connections between the quarters and a matrix for how the city centre needs to be connected in the future:

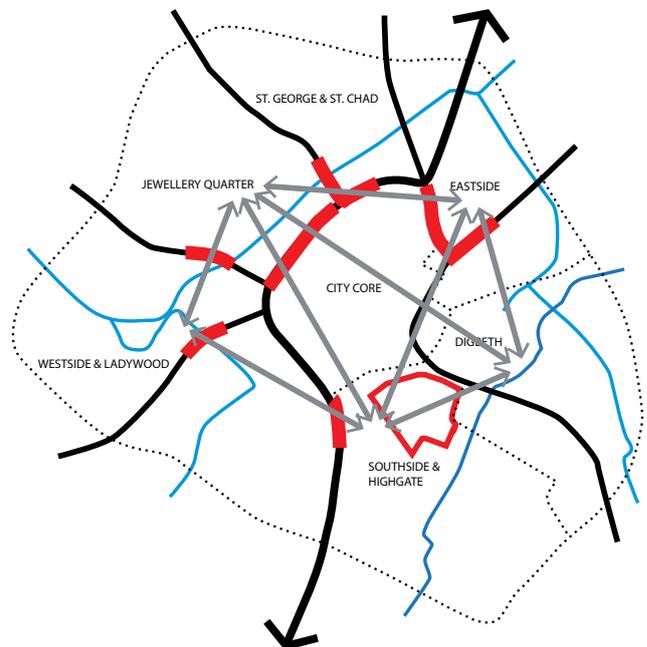
Using this conceptual analysis, it is then possible to overlay these high level desire lines between quarters and map them against barriers to movement; principally heavily trafficked roads. This analysis will allow BMAP's detailed follow up work to examine how best to break down these barriers to movement and establish the principles behind a 'Walkable City'.

City core and quarters - Matrix of Movement

(Meeting Objectives: 🔄 ❤️ 🏢 see page 22)

Walking is already a mass-mode across the city, and particularly in the city centre. BMAP has developed a matrix of movement, understanding what the key attractors are across the city centre, what the interactions and linkages are between the diverse and idiosyncratic areas that constitute the city centre and exactly who and how often these trips need to be made.

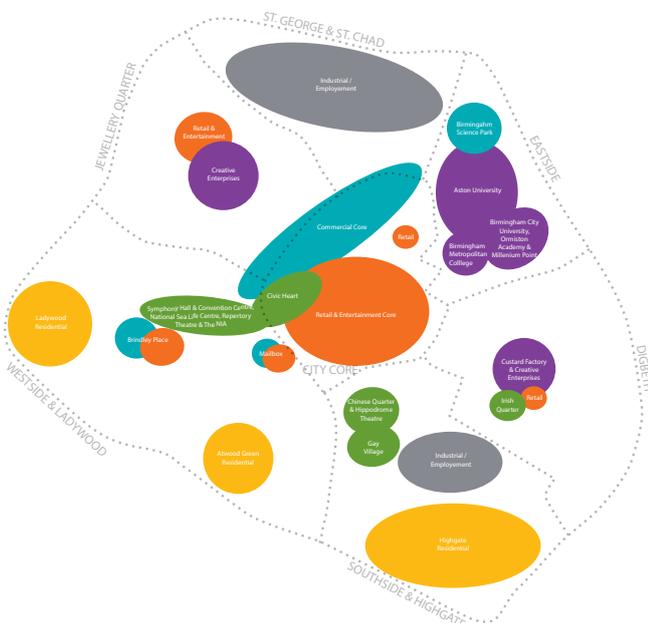
The assessment in the Big City Plan demonstrated a clear grouping of land use and characteristics across the quarters; which is schematically shown on the plan (below). This shows the main areas of the centre, colour coded to indicate similar characteristics.



'Green Wheel' network of linear parks and canal towpaths

(Meeting Objectives: 🔄 ❤️ 🏢 see page 22)

On top of a direct network for movement across the city centre, the canal and linear park network provides the opportunity for a leisure focused network or 'green wheel' of tow paths and park land crossing the city. Whilst not providing the most direct network of routes as they do not align with the desire lines these could provide a secondary network of traffic free routes that could underpin the more direct routes.



3. Provide and Promote a Range of Sustainable Transport Choices

Concept 3: The City core – car free zone?

As described earlier, a major risk to the aspiration for growth in the centre allied to improved urban realm is that unless something changes there will simply be higher and higher car demand. This in turn will lead to an uncompetitive centre because of congestion and the associated noise and environmental impacts.

Therefore plans and proposals need to be brought forward to facilitate the move to a car free city core as part of the development process for this area. Some initiatives which could lead to reduced car demand:

The concise nature of the city centre (2 miles boundary to boundary) and the profile of the resident population, both existing and proposed, should engender a mode share where 'alternative' modes dominate. Whilst alternative modes do have an increased share in the city centre there are still many short distance trips (either from just outside or within the centre) still undertaken by car. To address this it will take a number of both retroactive measures (for existing residents and travellers to the city centre) and proactive measures (for future residents and employees that development will bring) to deliver the three central themes of the vision for transport in the city centre:

Reevaluate the City Core Hierarchy of Road Users

(Meeting Objectives:   see page 22)

In the short term, the introduction of a fit for purpose city centre public transport network, the cycle reevaluation schemes, New Street Gateway and the introduction of the Metro extension will allow the Reevaluation of road space in the core and a new hierarchy of users to be developed. Private vehicle movements must begin to be carefully managed and marshalled through the:

- Reallocation of road space to public transport, pedestrians and cyclists;
- Increased use of shared space; and
- A core wide 20 mph zone.

Shared space is an urban design approach which seeks to minimise demarcations between vehicle traffic and pedestrians, often by removing features such as kerbs, road surface markings, traffic signs, and regulations. Typically used on narrower streets within the urban core, such treatments would be viable in the central zone to improve conditions for alternative modes.

Sustainable 'Urban freight'

(Meeting Objectives:     see page 22)

Freight in the centre predominantly takes the form of light goods vehicles concerned with deliveries and servicing to the tertiary industries that dominate the city centre. These deliveries and vehicles are vital to the operation of the centre. BMAP's intention is to improve the efficiency of these deliveries and reduce their impact on congestion, the urban environment and reduce levels of harmful emissions. A number of initiatives will be examined; including:

- **The imposition of a sliding scale of access approvals for goods and service vehicles.** This may mean that deliveries by certain vehicle types are restricted in the city centre during specific times of the day, such as peak periods or during normal shopping hours. However to encourage a move to lower carbon emissions deliveries by reduced or zero emissions vehicles could then be allowed during these times.
- **Urban freight consolidation centres:** The premise of an urban freight consolidation centre is to group individual consignments or part-loads that are destined for the same locality at an accessible location away from the city centre. This may enable a smaller number of full loads to be transported to their destination via alternative modes i.e. electric vehicle, scooter, bicycle or foot. Such centres can reduce the amount of freight miles and subsequently amounts of emissions affecting air quality (PM, CO₂ and NO_x), traffic congestion and conflict between road users. They also have the ability to maximise retail space (through reduced store-room requirements), reducing the delivery cost of 'the final mile', increasing the delivery window opportunity and meeting corporate social responsibility targets.

Urban freight consolidation centres tend to work well in environments similar to Birmingham's city centre (i.e. typically busy historic city centres where access can be difficult causing congestion, air quality issues, conflict in shared road space and difficulty in provision of adequate loading space). With the compact nature of the city centre, any such centre located on the periphery of the city centre would only have a less than 2 mile journey to their prospective delivery destination.

- **Local freight and delivery consolidation.** A smaller scale concept for a consolidation centre is that a group of similar businesses in an area can consolidate deliveries at a single location. At the lowest level such a centre could be set up for a single office development housing a number of complementary businesses or on a larger scale set up across either public sector buildings (i.e. hospitals, local authority bodies such as BCC or Centro) or on a Business Improvement District (B.I.D) level, a group of businesses engaged in often complementary business practices and concerned with the better management of their local environment.

Once again, the premise is that by consolidating the supply and delivery of common goods (office supplies, postage etc) then a group of businesses can not only save money, they can also have an impact on reducing the number of delivery vehicles entering the centre.

Reevaluation of the A38 through the City Centre

(Meeting Objectives: ♥🏙️ see page 22)

With the recent closure of the Queensway Tunnels a body of both quantitative and qualitative information has been captured as to the operation of the Birmingham city centre highway network with the tunnels out of commission for a six week period.

Anecdotal evidence to date would suggest that the network as a whole coped far better than was feared (although caveated that flows were lower than general due to the school holidays) with the tunnels closed and a number of temporary traffic calming measures (traffic lights on the Hagley Road and Suffolk Street) are now going through the process of becoming permanent schemes due to their success in regulating traffic.

BMAP believes there is scope for the medium and long term future of the A38 to be debated openly with the population of Birmingham to decide a future for its connectivity in the context of its impact on movement in the city core and across the city centre and their ability to either help or harm the long term vision for transport in the city centre. There is no doubt that the A38 provides a fast route across the centre for all traffic, but it also severs the centre creating a very noisy unattractive barrier to intra-centre movement.

Birmingham City Council intends to study the makeup of this traffic and identify the exact role of the A38, as either a means of accessing the city centre or to bypass the middle ring. This will provide good evidence as to what the best final solution should be.



Electric Freight deliveries in Netherlands



Cargo Bikes

City Core Low Emission Zone – only the cleanest vehicles will enter

(Meeting Objectives: 🔄 ❤️ see page 22)

The Council are considering a number of solutions to reduce harmful pollutants from road traffic and area currently in the process of determining the most appropriate to the exact nature and scale of the issue in Birmingham. One potential solution could be to apply a Low Emissions Zone (LEZ); following similar concepts adopted in London and other cities.

Whilst it has not yet been determined whether an LEZ is appropriate for Birmingham, or if it is then what form it could take, but it is a tool which is being considered.

There is no national framework to encourage the use of LEZs, although this is anticipated to change if the Governments 2015 targets for reducing nitrogen dioxide are not met as they were in 2010 when urban areas, which unfortunately included Birmingham, failed to pass the applicable EU standards. It is anticipated that this national framework would include a means of fining those local authorities that could not meet targets for NO2 reduction.

This could be achieved via:

- *Statutory or Voluntary Quality Bus Partnerships – Hard and soft measures for emissions monitoring*

The current SQP Scheme operating in the city centre area includes a requirement relating to the emission standards of the buses used in the area, with a sliding timescale leading to all 'core' services being operated by vehicles to Euro 4 standards by 28 May 2017, and for all 'complementary' services using vehicles to Euro 3 standard. 'Core' services are those operating at a frequency of 3 or more buses per hour during the bulk of the day. As a minimum the existing SQP Scheme will be extended with a view to achieving Euro 5 standards for 'core' services by 2020, and Euro 6 by 2024.

For example, Oxford has a LEZ in force, which currently takes the form of a series of QBP agreements with bus companies, and the use of a LEZ could address the use of commercial goods vehicles in the City Centre area as well as buses.

As a further example Norwich currently operates a bus-only LEZ. Bus companies have been required to implement emissions standards across an increasing percentage of their fleet: for example, by April 2010 all operators based within the LEZ and 50% of operators based outside the LEZ were required to meet minimum NO2 standards. Unlike Oxford's voluntary approach this LEZ is implemented by traffic regulation conditions applied to operator licenses, and is combined with separate, 'softer' measures within the overall LEZ, such as mandatory engine switch-off. Birmingham City Council and Centro will consider which approach is the best solution for the City, it is hoped that public transport operators will actively seek to be part of the solution.

- *City core low emission zone*

With the anticipation that new Government legislation in the short term will mean air quality targets will be set, monitored and failure to comply punished, Birmingham will consider the introduction of a LEZ for the city core.

Commuter Parking – should free or cheap parking for workers be a right?

(Meeting Objectives:    see page 22)

BMAP appreciates that car parking, and specifically city centre car parking is often a contentious issue, however a robust city centre car parking strategy is an important tool in underpinning wider movement strategies. The potential policy tools available to the city council include:

Birmingham Workplace Parking Levy

Alongside the availability of cheap long stay car parking, unregulated workplace parking greatly undermines the ability of alternative modes to compete as viable alternatives to the private car.

A Workplace Parking Levy (WPL) imposes a charge on employers that provide workplace parking over an agreed threshold. Employers then have a choice: absorb the cost; pass on the cost to their employees, who in turn could decide not to drive; or to reduce the number of spaces in their control.

Currently the only similar scheme operating in the UK, introduced by Nottingham City Council in April 2012, charges employers (both public and private sector) £334 per parking space; when 11 or more spaces are provided. This equates to approximately £1.30 per weekday per space. The scheme currently generates almost £8m per year in additional revenue to the city. Further information on this policy tool is discussed in Part E.

How would this translate in Birmingham?

Currently no definitive figure exists for the number of private non-residential parking spaces in Birmingham. It is estimated however that there is between 20,000 and 40,000 such spaces which could potentially fall into the scope of such a levy for Birmingham.

A levy of this kind is only one potential policy tool available to generate new sources of capital or revenue funding. If it were introduced then it would be the intention of the Council to ring-fence this funding and put it back into the transport system, investing in the schemes described in this document. Alternatively future revenue from the scheme for a five or ten year period could be leveraged or borrowed from the private capital market to create a significant pot of funding to help develop the BMAP vision.

However, revenue generation is only one part of the intended impacts from such a scheme. Indeed, to a certain extent it will have failed if it delivers the higher revenue forecasts for the scheme. This is because it is hoped that a significant number of spaces will be relinquished on the back of this scheme; either by employers or employees giving up their right to a space and choosing public or active transport instead. It is also hoped that future developments will build fewer spaces in order to avoid the charge and to encourage employees to come by alternative means.

Whilst the Nottingham workplace levy charge started off as a highly contentious scheme, as the scheme has progressed and matured, and as tangible by-products of the charge in the form of physical infrastructure on the ground has been delivered (two additional metro lines and the upgrade of the city's rail station); so attitudes to it have softened.

BMAP believes that a workplace parking levy for Birmingham needs careful and detailed examination and an open discussion for the future of the city.

Birmingham City Council – parking pricing structure review

(Meeting Objectives:    see page 22)

Cheap, long stay city centre car parking is detrimental to the effectiveness of alternative modes providing viable alternatives to the private car. Empirical data suggests that approximately half of the city centre car parks within BCC control are predominantly used by commuter or long stay parking. These are:

- Snow Hill
- Jewellery Quarter
- Ludgate Hill
- Paradise Circus; and
- Pershore Street

BCC will examine the possibility reassessing its pricing policies, similar to the privately operated car parks, with long stay parking costs potentially rising and short stay trips priced accordingly to engineer a parking profile that favours short stay and deters long stay parking.

At the most expensive BCC controlled city centre car parks the cost of a full days (7 plus hours) is still 50% cheaper than the privately owned and operated car parks in the city centre. At the other end of the scale the cheapest BCC operated car parks are over 80% cheaper to park in excess of 7 hours than the equivalent privately owned.

If we are to be successful in making commuters consider their mode choice for trips into the city centre, car parks within the control of BCC need to employ a uniform parking structure, similar to the private car parks with long stay parking cost prohibitive and short stay trips priced accordingly to engineer a parking profile that favours short stay and deters long stay parking.

We appreciate this may be less favorable as an increase in charges may in turn lead to a decrease in users and subsequently a decrease in revenue. However in the context of our transport system (with car parking playing its part as a component of the system) by deterring long stay car parking we are increasing and improving the viability of these same users switching to alternative as we narrow the margin in terms of relative 'costs' (both in terms of financial and time) between the private car and alternative modes.

However, increasing charges is not the only policy tool available which could have a positive impact. It could also be possible to include an 'Early Bird' price whereby a lower charge is available for all day parking if the user enters the car park earlier; before 8 am for example. It is hoped that this would help to spread out some of the peak period congestion by attracting some earlier travel and providing cheaper parking for those who circumstances mean that they still need to drive.

Consolidation of BCC car parks

BMAP's analysis has shown that there are some city centre car parks where current utilisation is low. These are:

- Dudley Street
- Markets; and
- Navigation Street

Therefore the future viability of these sites needs to be considered. The potential redundancy of some city centre car parks parking may free such sites up for redevelopment. In which case the council could consider selling to raise investment capital. Any revenue gained via the sale of these car parks could also be ring fenced and invested into the city centre transport system to ensure any perceived dis-benefit to the transport system in the loss of city centre car parking is off-set by improved alternatives.

The council will also consider selling some of its central area multi-story car parks for redevelopment and shifting its supply further out. These are particularly unattractive buildings which could be replaced to create a more attractive urban environment. **A solution frequently used in Europe is instead of having multi-story car parks they are built underground, putting the cars out of sight, and urban parks or other open spaces are built on top.** These make for much more pleasant areas to live and work. The detailed follow on work from BMAP will examine the feasibility of this approach in Birmingham.

Smarter use of the city centre car parking

With the developments in the city wide UTMC system, from late 2013 all of the BCC operated car parks will provide real-time usage information to the common database. There are also aspirations to have all privately owned and operated city centre car parks connected to the common database in a similar timescale. To underpin this information and so as to provide the full parking profile in the city centre the on street parking sensors schemes which have been piloted in both the Jewellery Quarter and Colmore Business District are rolled out city centre wide. This will mean all information relating to both on street and privately and public owned car parks are fed back into the common database so the full profile of city centre car parking can be understood.

Interrogation of this data will provide finer detail as to how city centre car parking is currently used across the year. From this the Council understand the idiosyncrasies of car park usage dependent on both time and date and provide a suite of car parking strategies to address them and to engineer an appropriate car parking profile.

Another benefit of this data is that it can be provided 'live' to drivers to enable them to find spaces quicker and more efficiently. This will be via a combination of variable message signs on-street, and the development of smart phone applications to provide the information to users.

Reducing the Need to Travel

(Meeting Objectives:   see page 22)

In addition to all of the initiatives put forward which aim to shift people from cars to more sustainable modes, other measures will include trying to get people to travel less in general. This will be of particular focus for the city centre because the issue here is not just too many cars; it is also concerned with protecting capacity on the public transport network. However, this initiative could be applied anywhere in the city.

There will need to be a focus on employers to provide the infrastructure and working practices to enable people to work from home or another remote location more often. Even if this were just one or two days a week, there could be significant benefits to the transport system as a whole. It is always more difficult to change current behaviour than it is to influence behaviour before it starts. Therefore a major focus will be on new developments, particularly given the 50,000 new jobs planned in the city centre by 2031. New developments and employers will be encouraged to adopt some of the following practices:

- Allow and encourage staff to work from home, even on an informal or infrequent basis.
- Provide more flexible working hours to enable some staff to travel outside of the peak periods.
- Maximise use of digital infrastructure to ensure no loss of productivity from home workers.
- Utilise hot-desks in offices to reduce the amount of space and equipment needed to support.
- For larger employers it may be possible and indeed cheaper to establish some satellite offices/remote working hubs in other areas of the city. These could then be used by staff that can access them by walking or cycling if they live nearby. Their trip making will then be shared between both the central office and the remote hub, depending on the needs of the day. Businesses could potentially save significant amounts on expensive central area rents by spreading their needs across the city.
- Reduce the number of car parking spaces available to employees to below the allowable development limit.

The City's TravelWise initiative works closely with businesses to encourage employees to travel by more sustainable means. However, there is not an infinite amount of capacity on public transport either. BMAP proposes that TravelWise expands its remit to work with city centre and other large employers elsewhere in the city to help reduce the total quantum of trips to their sites each day. Ultimately there can be significant financial benefits to businesses who adopt such policies as they can reduce their office space and other overheads through hot-desking.

These initiatives may only have small impacts overall, but they should be viewed as part of an integrated package which will achieve results greater than the sum of its parts. All initiatives need to contribute to the overall BMAP objectives and targets. For example, a person may previously have driven their car and parked in a car park for £3.50/£4 all day. BMAP may change parking policy and increase this price to preserve parking for short stay trips. Thanks to the initiatives put forward in BMAP this person now has a number of choices: use the much improved public transport network; ride their bike to work on the new network of cycle routes; or choose to work from home because their employer has encouraged this practice. All of these responses will generate a positive impact on the transport network and contribute to the wider agendas of health and equity.

Developing a City Centre Transport Action Plan

The above ideas and concepts for the city centre are currently being examined in further detail in a follow-on piece of work to BMAP. A city centre transport action plan is being developed which will identify specific proposals to implement the vision set out in the Big City Plan and Vision for Movement. The action plan will include a prioritised list of integrated initiatives which are aimed at solving the transport issues raised in this section.

PART E – REALISING THE VISION

This section provides some insight as to how the principles of BMAP may be delivered. In particular we recognise that there is a significant gap between the aspiration for new infrastructure and the funding currently available to us to deliver it. However, one of the key aims of BMAP is that it expresses the city's aspirations and demonstrates clear linkages between transport investment in helping to generate jobs and economic growth. The strategy and technical analysis which goes with it can then be used to lobby for the powers and funding to make it happen, and help build the partnerships and investment plans needed to deliver our vision on the ground. Birmingham, along with other Core Cities, is in dialogue with Government with a view to having more local control over how public money is allocated and spent on our transport systems. Currently, England has one of the most centralised decision making systems in the Western World when it comes to local transport investment. We would like every major city to enjoy the same freedoms and flexibilities enjoyed by Transport for London, who have enjoyed considerable success in building London's public transport services.

Key desires include a single settlement for the whole of local transport funding with maximum flexibility on how it is spent, and devolution of powers (such as the moving traffic offence powers within the Traffic Management Act 2004) so that we have more direct control in managing our local transport networks efficiently. The ability to retain income generated locally could potentially allow us to invest in 'up front' infrastructure improvements and pay the money back over time as our economy grows.

This section also outlines some concepts for potential new revenue streams which could be ring fenced for investment in the development, maintenance and operation of Birmingham's transport system.

E1 - WHERE WILL THE MONEY COME FROM?

We, together with Local Authorities up and down the country, are facing unprecedented cuts to its budgets. However, it firmly believes that investing in transport infrastructure is an investment in the future prosperity of the city. BMAP has looked to other cities both in the UK and globally to explore viable options for securing investment funding and will seek to maximise opportunities from Central and European Government initiatives.

Spending on infrastructure projects which generate employment and attract private investment supports the economy. For that reason Central Government and its executive agencies continue to generate new challenge funds, initiatives and funding streams which we continue to exploit.

Recent successes in exploiting such revenue streams include Birmingham's £17m Cycling Ambition Grant, Pinch Point funding for Ring Road improvements and improvements to Park & Ride (£3.9million and £2million respectively) and Local Sustainable Transport Funds (£33m for the West Midlands Radial Routes Package, and £4.1m for Bike North Birmingham).

By having a comprehensive vision for meeting our future transport needs, Birmingham will be better placed to make a business case both for public sector grant funding as and when that becomes available, and for private sector investment, whether that be from developers, transport operators or other investors.

Working in Partnership with the Private Sector

The development of Business Improvement Districts (BIDs) has generally been accepted as a success. These organisations take great pride in their local areas and have demonstrated a willingness to invest private sector funds into public areas. We recognise the importance of BIDs in the future development of the city and are encouraging greater use of this model.

Many of the initiatives put forward in this BMAP consultation document could be developed in close cooperation with either BIDs or other formalised groups of businesses and funded at least in part through either voluntary contributions or through planning obligations for new developments (termed 'Section 106 agreements'). The private sector has a crucial role to play in the development of our city and we wish to work closely with partner organisations to help realise the vision.

An example of this partnership approach working in practice is the current highways management Private Finance initiative (PFI) contract that the council has with Amey. Under this arrangement Amey is providing investment in our roads and associated infrastructure (e.g. lighting), in exchange for a 25 year contract for their maintenance and operation. There may be other ways to use similar arrangements to deliver some areas of BMAP. Arrangements called 'Local Asset Based Vehicles' (LABVs) are similar to PFIs whereby private companies provide funding to build infrastructure in exchange for shares of council owned assets.

Potential New Funding Streams

There are a number of possibilities open for the City Council to generate additional income, which could be ring-fenced and targeted at building and operating/maintaining new transport infrastructure. These include, but are not limited to:

A new system of government-agreed employee tax models

This would emulate models that have been successfully developed across Europe. Taxation models of this type have been shown to provide long-term investment for key infrastructure developments. The principal being that businesses gain a great deal from a more efficient urban transport system; it enables their employees to get to work, facilitates commerce and opens local markets.

Such a model has been in place in France since the early 2000's through the Versement Transport (VT) scheme. VT is a local tax levied on the total gross salaries of all employees of companies of more than nine employees, originally ring fenced to raise capital for investment in local public transport infrastructure, but more and more used to cover its operating expenses. The tax is levied on the employer, not the employee directly. The money is directed to the urban regional transport authority, the local government authority responsible for organising public transport.

In 2010, this tax financed nearly 40% of the operational cost for the public transport network

Of the Paris Metropolitan region; the tax in France is currently capped at 1.8% of company salaries.

Whilst not directly within our control, the Council could work with central government to investigate the feasibility of a similar model for the UK.

Some form of road user charging scheme

Another available policy tool could be to directly charge road users. There are many different ways a scheme of this type could be brought forward. At one end of the scale there could be a wholesale change in the way that we all pay for road use which would be led from a national government.

Other forms of charging could be collected at a local level and include schemes similar to those operating in London and Stockholm. This debate has been in the public eye as recently as 2008 when the government funded a series of studies into the feasibility of road pricing in urban areas. The high profile cases were in Manchester and Edinburgh where local referendum's failed to convince voters of the benefits. Despite these public opinion setbacks there is a strong evidence base that fair and equitable schemes are possible and that there are significant benefits to be gained. Benefits both from generating revenue for transport infrastructure; but also to society and local economies from reductions in car use.

Stockholm took an interesting track to implementing their scheme. A public vote was promised but only after a trial scheme had been in for a period of time. It was felt that only then could people make an informed choice as to whether the scheme benefited or disbenefited them personally. The scheme was voted in by users, turning around a negative opinion before the trial.

A workplace parking levy

The concept for this levy was set out earlier in Part D; whereby businesses pay a levy for every parking space they provide to their employees. The business can then respond in a number of ways: they could simply pay the charge; they could pass it on directly or in part to their employees (who could then choose to relinquish their space); or they could reduce the number of parking spaces to reduce the amount of levy they pay. To a certain extent this is also a form of road user or congestion charging as one of its principle aims is to engender a change in travel behaviour from cars to more sustainable modes.

A scheme of this type has been in operation for over 18 months in the UK. The Nottingham

Workplace Levy Scheme was introduced by Nottingham City Council in April 2012.

The scheme currently charges employers (both public and private sector) £334 per parking space for car parks with 11 spaces or more.

Whilst the WPL charge started off as contentious, Nottingham City Council set a robust rationale: congestion is worst at rush hours when people are going to and from their workplaces and when the best alternative options are available. It's therefore reasonable for businesses to pay towards improving those alternative options from which they will benefit most.

Approximately 2,500 eligible employers have complied with the levy since it came into effect, contributing just under £8m towards local transport investment in its first full year. The WPL also leverages £3 of government funding for every £1 from the levy and once the schemes it funds are complete, it is forecast to deliver £10 of economic benefits to the city for every £1 of levy. Forecasts suggest that together with tram, train and bus improvements, the WPL will help reduce traffic growth from 15% to 8% and reduce annual car journeys in Nottingham by 2.5 million in 2015.

Many were concerned that WPL would put businesses off from investing in Nottingham or drive existing businesses away. However 99% of all identified workplace parking places were licensed in the first licensing period (2012) and 86% of employers renewed their licenses for the next licensing period (2013). 2012 (year of introduction of the WPL) also saw the highest number of companies that Nottinghamshire county council has supported moving to the city for over five years.

As the number of eligible parking spaces in Birmingham is not exactly known an estimate of the potential revenue from such a scheme here cannot be provided at this time. However, if applied across the whole city it could certainly be higher than the £8million per annum being raised in Nottingham; depending on the eligibility criteria chosen.

Loans from financial institutions

Investment institutions, such as the European Investment Bank (EIB), provide loans for large infrastructure projects to public bodies which can demonstrate clear links to creating jobs and economic growth. For example, recently in the UK the EIB has provided loans to help deliver one of Manchester's tram lines, develop another tram line in Nottingham, widen sections of the M25, purchase rolling stock for the Thameslink Programme in London and contributed to the current building of the Crossrail project in London.

One means of leveraging in these types of loans is to borrow against future raises in local tax revenue. For example, when new transport infrastructure is built it can have a knock-on effect of raising land and real-estate values, which in turn can increase council tax revenues. If a council can demonstrate how investment in a particular area can realise increases in their future revenue streams then some institutions lend against this. This is known as tax incremental Financing, or sometimes as 'earn-back' models.

E2 – WHAT ARE THE TIMESCALES FOR BMAP?

As stated in Part A, BMAP is a 20+ year vision. It broadly follows the same timeline as the Birmingham Development Plan (BDP); which projects population, housing and economic requirements to 2031. However, BMAP also has an eye on the longer term.

Whilst the BMAP White Paper due in March 2014 will set out investment priorities, the intention is that it will also provide the foundation from which to respond to any new funding streams which become available. That way when central or European government funds for specific transport objectives (such as the LSTF or the Cycle City Ambition Grant) become available then Birmingham can put forward strong BIDs and demonstrate how it fits into the overall vision.

At this stage, the detailed programming and time frame for delivery of BMAP will be governed by the availability of funding.

However, this does not mean that the initiatives cannot be prioritised and a high level programme developed. Following the consultation period a final list of BMAP initiatives will be drawn up and ranked against the objectives and targets set out in Part A of this document. This process will identify the priority for schemes, which will then be mapped against development or other infrastructure plans. Initiatives which directly support specific developments identified in either the BDP or planning documentation from other surrounding authorities will be programmed to coincide with them. Higher priority items will be considered for early inclusion in the programme period, whilst pushing back lower priority items. This will be tempered by estimates of when funding opportunities may become available.

The strategy put forward in 2014 will not be fixed and immovable within its 20 year horizon. We envisage that it will be revisited and reviewed every five years. This will enable flexibility and to ensure that BMAP takes advantages of:

- Emerging technologies which could improve the plan or reduce costs
- Reviewing city, regional and national priorities
- Opportunities brought forward by peaks in development activity
- New or changed funding opportunities

E3 - WORKING WITH LOCAL PARTNERS

We cannot deliver this vision on our own. Whilst BMAP sets the vision for the city we fully recognise that Birmingham sits within a regional economy and that what's good for the region is good for Birmingham; and vice versa. Whilst not wishing to impose our vision on other areas we do believe that the principles put forward in BMAP can benefit the region as a whole.

We will therefore work closely with regional partners to realise stronger transport links and achieve collective economic growth. In particular, we will be seeking to:

- Facilitate city economic growth by providing the best means possible to enable people travelling into Birmingham to do so by sustainable modes; which will include:
 1. Extending cycle routes into nearby authorities
 2. Extending direct public transport routes into nearby authorities
- Find appropriate sites outside of Birmingham for park and ride facilities on public transport lines which service the city. These sites may be just inside, just outside or actually quite far outside of the city's boundary. Finding these strategic sites will recognise that it is to the benefit of the region as a whole, through an improved ability to move people that car trips and congestion are minimised.

We will also seek to facilitate regional economic growth by enabling Birmingham residents to take advantage of the opportunities generated by the wider region and the UK as a whole; and to do so using sustainable modes.

Analysis in this document has shown that 25% of commuters living in Birmingham travel outside of the city every day. BMAP will seek to ensure that where there are growth opportunities outside of the city that could provide job opportunities for residents (particularly those living in deprived areas) we will seek to deliver the necessary quality of transport links to enable them to do so. Examples include:

1. The proposals for 'UK Central' around the M42 in Solihull
2. Development Areas in the Black Country (e.g. Darlaston)
3. Other locations in the West Midlands journey to work area

In order to achieve these improved links it is important that we work with other authorities through a number of governance arrangements. Many funding decisions are now decided upon under the Local Enterprise Partnership (LEP) framework. Birmingham sits within the Greater Birmingham and Solihull LEP (GBSLEP); which collectively determines the priorities for large-scale publically funded transport infrastructure. The council will work together with partners within the GBSLEP and with neighbouring LEP's to identify the best solutions to benefit all parties.

Centro, as the passenger transport executive for the West Midlands metropolitan area, has a key role to play in supporting the planning, delivery and operation of transport solutions across the wider conurbation and the updating of the West Midlands Local Transport Plan.

SUPPORTING PARTNERS:



Birmingham Business
Improvement Districts



For more information contact:
 0121 352 4893
transportpolicy@birmingham.gov.uk

birmingham.gov.uk/bmap